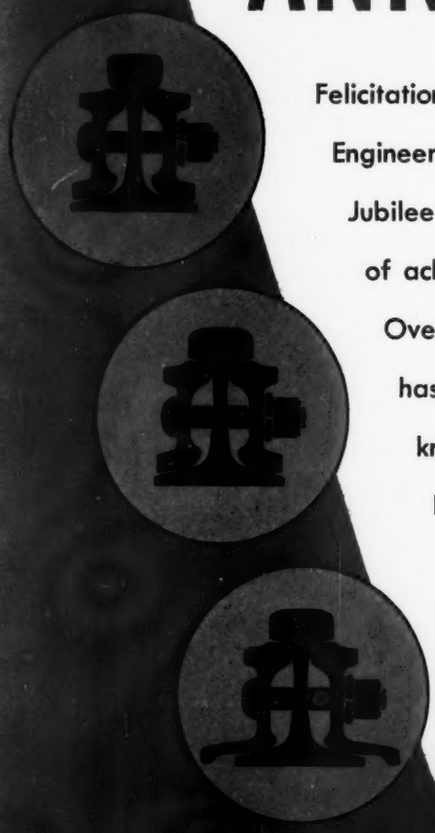
RAILWAY AGE

AREA PRE-CONVENTION NUMBER

MARCH 12, 1949

Congratulations!

A. R. E. A.
GOLDEN ANNIVERSARY



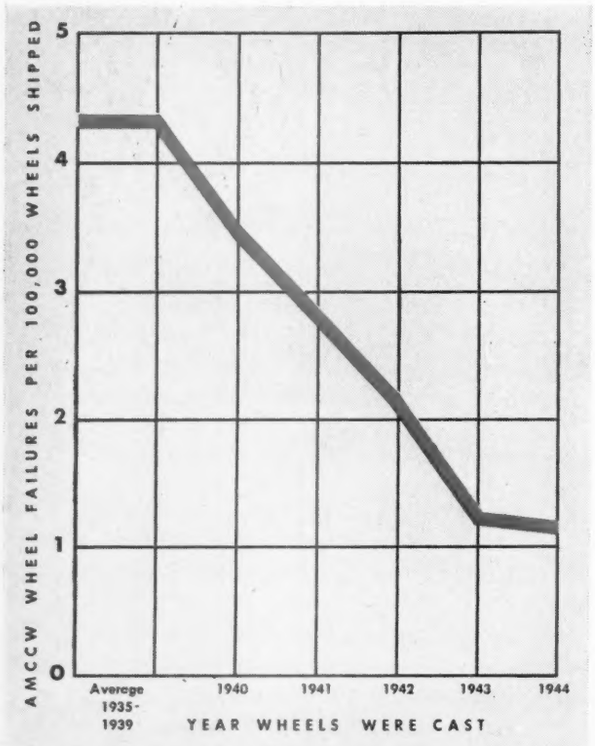
Felicitations and best wishes to the American Railway Engineering Association as it commemorates, in Golden Jubilee Convention, Chicago, March 15-17, fifty years of achievements in behalf of the American Railroads. Over the many years—1899-1949—your Association has kept faith with its objective—"the advancement of knowledge pertaining to the scientific and economic location, construction, operation and maintenance of railways," and has made a tremendous contribution in their behalf. Truly, your Association has had *"A Past of Achievement."* Truly, you have *"A Future of Opportunity."*

THE RAIL JOINT COMPANY Inc.

50 CHURCH ST. NEW YORK 7, N. Y.

Chilled Car Wheels

SURPASS OWN SAFETY RECORD



Relationship of AMCCW Chilled Car Wheels shipped in U. S. during individual years, to Failures causing ICC Derailments within 300,000 gross ton miles of wheel service after date cast.

The descending curve in this recent chart marks a year-by-year reduction in AMCCW wheel failures. It compares relative failures during equal service periods.

It shows that the *trend to greater safety continues.* Chilled Car Wheels cast in 1944 surpass their own previous record. They had fewer failures —during their first 300,000 gross ton miles— than those cast in any other year.

Behind this improvement in safety are (a) higher standards of wheel making carried out by members working closely with AMCCW Resident Inspectors and General Inspectors, and (b) the results of uninterrupted research and tests made increasingly strict by AMCCW metallurgists in the Association's laboratories.

ASSOCIATION OF MANUFACTURERS OF CHILLED CAR WHEELS

445 NORTH SACRAMENTO BOULEVARD, CHICAGO 12, ILL.

American Car & Foundry Co. • Canadian Car & Foundry Co. • Griffin Wheel Co.
Marshall Car Wheel & Foundry Co. • New York Car Wheel Co. • Pullman-Standard Car Mfg. Co.
Southern Wheel (American Brake Shoe Co.)

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RAILWAY AGE

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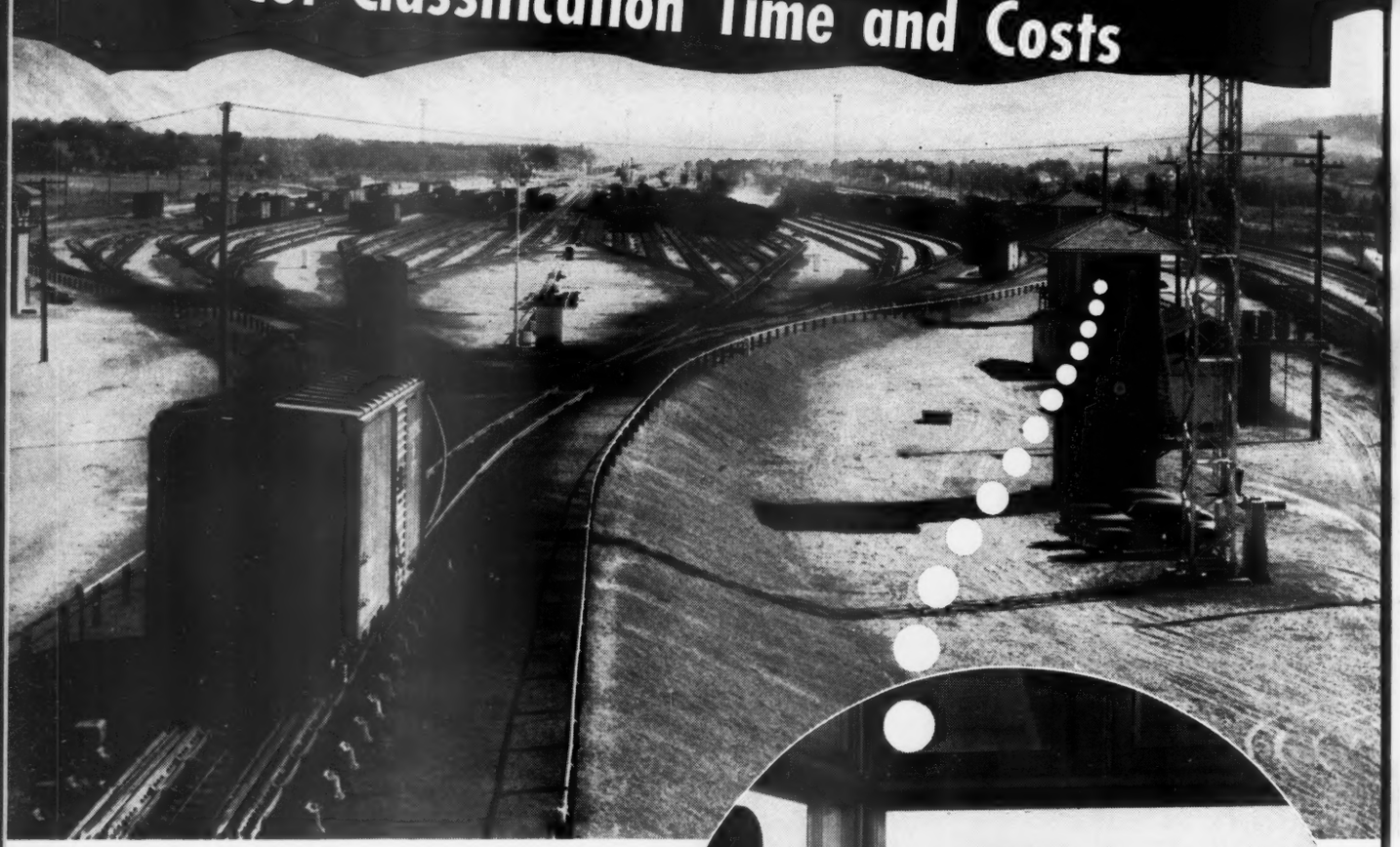
On the "UNION" Car Retarders

Cut Classification Time and Costs



Congestion caused by an enormous volume of traffic . . . reaching seasonal peaks . . . prospects of even heavier future traffic . . . these were some of the problems which led to the construction of a hump yard equipped with "Union" Car Retarders at Pocatello, Idaho on the Union Pacific.

With the increased flexibility, capacity and efficiency made possible by the Car Retarder Yard, congestion has been eliminated. Moreover, the new facility permits more effective segregation of cars and consolidation of traffic . . . shortening the terminal time of trains at other places by reducing or eliminating entirely the switching at such points.

The speed-up of classification improves the company's competitive position by assuring the maintenance of advertised schedules to meet market requirements. Most important, the great reductions in classification costs are rapidly writing off the initial investment.

UNION SWITCH & SIGNAL COMPANY

WEEK AT A GLANCE

GOLDEN ANNIVERSARY: Fifty years ago this month the American Railway Engineering Association held its organization meeting at Buffalo, N. Y. Next week, at Chicago, the association will hold its fiftieth—Golden Anniversary—meeting. The program for the occasion, carefully worked out with due regard to its special nature, is published on page 66.

ENVIABLE RECORD: Railroad men, according to their official positions and their personal and professional interests and accomplishments, can and do belong to many different organizations and associations. Some of these may be older than the A.R.E.A.; they all have fine records of achievement in their respective fields. But it would be hard to find any association of railroad men which has a *better* record, which has done more for its individual members or for the railroad industry as a whole, than the engineering group which is just entering its second half-century. In honor of the occasion we present in this issue, beginning at page 67, a series of copiously-illustrated articles covering, respectively, the origin and development of the A.R.E.A.; the work of its present organization; and its various research activities. A report of the meeting itself will appear in our March 19 issue.

PROUD OF OUR PART: Modesty may be a virtue—but there's certainly no sin in claiming credit for good work, well done. And so we take the liberty of pointing out that staff members of *Railway Age*—past and present—have consistently taken active parts in A.R.E.A. affairs. We hope they—and others yet to come—will continue to play an active part in making the association's second half-century as successful as its first.

RAILWAY SOLVENCY AND NATIONAL SAFETY: Through its president, P. Harvey Middleton, the Railway Business Association has recently called attention, in no uncertain terms, to the fact that physically strong and financially healthy railroads are absolutely indispensable to our national safety. The statement, which includes some suggestions as to how the railroads can be made and kept strong, is published in the News columns.

ONE REGULATORY AGENCY? The so-called "Hoover commission," in a recent report, recommends some sweeping changes in the work of federal agencies responsible for regulating transportation. The proposed changes are outlined in the week's News.

ALL-ELECTRIC DINER: Last week's News section reported the receipt, by the Illinois Central, of the country's first all-electric dining car. An article on page 86 of this week's issue gives a more complete description, with illustrations, of the new car.

EX PARTE 168: Interstate Commerce Commission hearings at Washington, D. C., on the railroads' Ex Parte 168 application for a 13 per cent increase in freight rates were concluded this week. A report of the hearings, continuing the account begun last week, appears on page 92. Meantime, as reported in this week's News pages, some of the brothers —conductors and trainmen—have indicated their intention of trying to boost railroad costs still higher by filing, soon, demands for further changes in working rules.

F. R. P. DINNER: Last week, at New York, the Federation for Railway Progress held its second annual dinner. A brief account of the event, with pictures of speakers and recipients of various F.R.P. awards, appears on page 65.

MONEY SAVERS: The A.R.E.A. Chicago Meeting, with its natural emphasis on better, cheaper and safer ways of doing necessary construction and maintenance work, gives special interest to a whole series of new and improved devices described and in most cases illustrated on pages 74-85. A special post-card insert on pages 83 and 84 offers a quick and convenient way of obtaining additional information about any or all of the devices.

IT'S AN ILL WIND: Officers and employees of Western railroads probably hope there'll never be another winter like this one. But—making the best of a bad situation—they learned from it many new lessons—new tricks of snow fighting and equipment utilization which, in years to come, may prove useful to railroads everywhere. Some of these lessons are discussed, and the conditions that taught them are illustrated, in an article beginning on page 60.

END-TO-END COMMUNICATION: An illustrated article beginning on page 90 tells how the Chicago, Burlington & Quincy, by use of space radio, has cut down freight-train delays on two divisions.

CHICKENS COME HOME TO ROOST: Despite the close community of interest between the steel and railroad industries, a certain segment of the former has used, and advocated extension of, socialized transportation facilities. Our leading editorial points out that proposals for government manufacture of steel represent an extension to steel manufacturing of the same socialistic policies that some steel men have favored as applied to railroads.

GM Diesels on the Great Steel Fleet

A fleet of twenty-two 4000 H.P. General Motors Diesel locomotives, used in the hauling of the New York Central's "Great Steel Fleet" of trains between Harmon or Boston and Chicago, St. Louis and Cincinnati, has averaged 27,895 miles a month per locomotive since the first went into service in March 1945.

The list of trains includes such famous names as the 20th Century Limited, the Empire State Express, the Lake Shore Limited, the Commodore Vanderbilt, the North Shore Limited, the Wolverine, the Pacemaker, the Southwestern Limited and the Ohio State Limited.

Four 2000 H.P. General Motors Diesel units went into service in March 1945, eight more in October 1945, twenty more in April 1947 and twelve more in February 1948. Total mileage made by the first four units through September 1948 was 4,692,986.

The average of 27,895 miles a month for all twenty-two locomotives (44 units) was accompanied by an average availability of 86.93%, *based on the number of hours available to total potential hours.* This enabled the locomotives to meet their assignments an average of better than 95% of the time.

Records like this make it easy to understand why more and more of America's railroads are using more and more General Motors Diesel locomotives to power their finest trains.

GENERAL MOTORS LOCOMOTIVES

ELECTRO-MOTIVE
DIVISION OF GENERAL MOTORS, LA GRANGE, ILL.
Home of the Diesel Locomotive

RAILWAY AGE

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SOCIALISM GRABS FOR THE STEEL INDUSTRY

President Truman has proposed that the government engage in the manufacture of steel not only to increase production but to regulate prices by government competition. Thus, we see the same policy of socialization advocated for the steel industry that has been applied to the transportation industry, and the same arguments advanced for it. Long before the development of transportation by highway, large government expenditures on toll-free inland waterways were successfully advocated upon the grounds that they were needed (1) adequately to expand transportation and (2) to provide competition with the railways that would regulate freight rates.

Chickens Come Home to Roost

Illustrating how bread thrown upon the waters can return after many days, much decayed; and how chickens can come home to roost, somewhat dilapidated—it just happens that some parts of the steel industry have eagerly profited by government subsidization of competition with the railways, and other parts of it have eagerly promoted increase of such government-subsidized competition with the railways. The steel manufacturers at Pittsburgh have been among the biggest users and beneficiaries of transportation via the Ohio-Mississippi waterway system, the cost of which has been largely borne by the taxpayers of the United States; and the steel manufacturers at Youngstown have been among the most energetic promoters of the Beaver-Mahoning canal, the construction of which would enable them to take much of their traffic away from the railways and move it by water at costs also largely borne by the taxpayers. Still other steel manufacturers are now favoring the construction of the St. Lawrence Seaway.

For many years *Railway Age* has been a voice crying in the wilderness, warning the nation's businessmen that socialization is an infectious disease which, once started in any industry and not immediately cured, inevitably spreads to other industries. Most businessmen, unfortunately for the country as well as for themselves, however competent they are in doing what will make a profit *today*, are stone blind regarding the policies which if persisted in will rob them of all chances of even staying in business a few years hence. Thus businessmen, in this and the few other countries where there are still any businessmen left, present the curious and disheartening spectacle of being loudly vocal against socialistic policies in general and in their own industries in particular, while the very same men—as individuals and in sectional or industry groups—exert themselves and spend their companies' money to promote socialization where-

ever they believe it will benefit them and their stockholders at the expense of everybody else.

The railways—because of the subsidization of transportation by water, highway and air—have been the first and hardest-hit victims of the promotion of socialization by these pretended opponents of socialism. The next important victims have been the private power companies, subjected to the competition of T. V. A. and other government-subsidized power projects. The next serious threat has come in the form of subsidized government housing. And now President Truman, inspired and backed by the C. I. O., proposes and threatens to socialize steel.

What Is Business Going To Do?

What is business going to do? Is it going to have enough simple common sense to unite in an effort to extirpate this damnable socialist infection from every industry, or is each industry going to continue trying merely to prevent getting infected itself in face of the plain certainty that unless socialization is stopped soon in the transportation and other industries already infected it will rapidly spread to other industries, and quite likely to all industry?

What will the middle class do? As set forth in an editorial in the January 1 issue of this paper, the unorganized "bourgeois" is already in process of rapid liquidation by the highly organized "proletariat" in this country. Every socialistic policy attacking *any* industry is an attack on the middle class because the middle class is the greatly preponderant owner of *every* industry.

The great American middle class embraces most of the nation's intelligence and education and owns most of its property. Is it going to yield up all these things because of a deficiency in consistency and courage?

Is it so excessively and selfishly individualistic that it cannot organize and adequately resist the systematic efforts being made to despoil and destroy it? Because the middle class of Britain and France lacked the qualities necessary to survival, it has already been virtually destroyed in those formerly leading nations.

The trend of things is no different on this side of the Atlantic, except that Europe is farther advanced on the calendar and it had less freedom to start with than prevailed here. This country emerged victorious from two great military contests because we were given *time* to organize our defenses; and we have again been given *time* to organize our defenses against collectivization. But time is not worth anything if it is thrown away—as it is being thrown away by leaders of business who are unable to make up their minds to assume the minor sacrifices of immediate self-interest without which consistent and effective opposition to socialization is clearly impossible.

THE A.R.E.A.—FORMULA FOR LONGEVITY

"How to Realize the Advantages of Cooperative Effort Without Loss of Independent Action"—this might well be the subtitle of the history of the American Railway Engineering Association. In the record of this association there is a lesson in how the creative energies that are fostered only by the free enterprise system can be most effectively applied in the interests of progress and the ultimate good of the entire economy.

At the time the A.R.E.A. was organized in 1899 the average engineering or maintenance officer on the railroads was and had to be an extreme individualist. His job was to develop designs and practices for use in the construction and maintenance of the physical plant of his own railroad at a time when the industry was undergoing rapid expansion. Having little or no contact with officers of similar duties on other lines, he had no choice but to act independently. The result was that the gage of the track was about the only feature that some lines had in common with each other. Each railroad had its own designs and specifications for track fastenings and materials, grading, bridges, and buildings—and many engineers were inclined to the opinion that their own creations were superior to those of others. There was on the other hand, a growing conviction that the many variations in practice were economically wasteful and that the rate of technological progress under the system of independent action was far from satisfactory.

Against this background the viewpoint was gathering strength that a compromise must be sought between the desire to preserve individuality and the need for cooperative action in adopting more uniform practices and in promoting technological progress. Sensing this trend of thought and realizing that the most effective medium for getting the desired results would be an association of engineering and maintenance officers, *Railway Age* took the initiative in arranging a meeting of those officers to organize such an association. The outcome is history and is told briefly elsewhere in this issue.

The A.R.E.A. began immediately to get results. Its members, having to a large extent acquired their training in an environment which tended to emphasize individual initiative, soon found that the idea of collaborating with others in furthering technological studies and in promulgating uniform practices was not incompatible with their desire for independent action. There was nothing mandatory in the recommended practices of the A.R.E.A.; they were simply there for anyone who cared to take advantage of them. Here, then, was an organization which could win the general support of railroad engineers; many of them were soon contributing generously of time and energy in its behalf.

The continuing desire for independence on the part of the A.R.E.A. members is reflected in the relationship of their group with the Association of American Railroads. While other associations of railway officers were absorbed completely by the parent association, the A.R.E.A. insisted upon retaining a form of affiliation which preserves its separate identity, its original form of organization, and a considerable measure of independence.

In its 50 years of existence the A.R.E.A. has chalked up an impressive list of accomplishments; and it is still going forward with undiminished energy at the task of solving the railroads' engineering problems. Somewhere in its form of organization there is incorporated a formula for long life and continued usefulness—possibly in the manner of which it goes about securing collaboration without relinquishing individual initiative.

CRANK PIN RESEARCH

The prevalence of locomotive crank-pin failures only a few years ago was a source of serious concern. In addition to causing personal injuries, sometimes fatal, locomotive crank pins which fail in service are a potential source of extensive damage to equipment and roadway, as well as of interrupted operation and delays to traffic. Hence, it is important to know which types of crank-pin design, what methods of heat treatment, and whether rolled, flame-hardened, peened, arc-bonded, metallized, or ground wheel-seat finishes will show the greatest resistance to the initiation and development of fatigue fractures in service.

The investigation inaugurated several years ago to find the answers to these questions is an excellent example of the kind of research now being conducted by the Mechanical Division of the Association of American Railroads. Two preliminary reports were made in 1943 and 1944, respectively, and the Third Progress Report, which has just been issued, completes the investigation of 20 different types of carbon-steel crank pins, including 88 normalized-and-tempered solid pins and 28 quenched-and-tempered pins with 3-in. center bores.

The comprehensive scope of the laboratory tests, the exacting care in all details and the convincing presentation of well organized conclusions, with voluminous supporting data, are evident from a perusal of the report. Admittedly, a technical report of this character is not easy reading for the layman, even one with general railroad experience, but the investigation and its results are, or should be, of great interest to three classes of railway officers: namely, executives responsible for costs; operating officers who want to eliminate every possible locomotive and train delay; and mechanical officers who must design, apply and maintain crank pins in such a way as to promote maximum reliability at reasonable cost.

The information made available in the two preliminary test reports is already responsible for some improvement in conditions. The annual reports of the I. C. C. Bureau of Locomotive Inspection show a consistent decrease in accidents due to failures of "crankpins, collars, etc." practically each year from 1944 to 1948. The actual figures are: 1944, seven accidents, nine injured; 1945, five accidents, one killed, four injured; 1946, five accidents, five injured; 1947, three accidents, three injured; 1948, two accidents, two injured. While these figures indicate the trend, they are by no means a measure of the full effect of improved crank-pin service since they include only failures resulting in casualties.

SCRAP FOR STEEL

The railroads, being one of the country's principal users of iron and steel, have an admittedly selfish motive in contributing all they reasonably can to the supply of scrap necessary for maximum steel production; they do, of course, continually make large contributions to that end. More is needed, however, than just ordinary or routine effort in this direction, because national security requires not only a normal flow of scrap, but an extraordinary supply. If the steel needs of domestic industry are to be met—along with such exports to friendly nations as are required to keep them on this nation's side, plus the development of a "stockpile" against possible emergency needs—then intensification of industrial scrap collection is essential.

A nationwide program to this end has been instituted under the leadership of Secretary of Commerce Charles Sawyer—but the success of the effort lies with American industry, and with the industrial press, which is cooperating fully, for motives of patriotism as well as in the belief that voluntary action by free people is more productive of results than coercive action. In some countries, industry would not be *invited* to participate in such a program—it would be *forced* to do so.

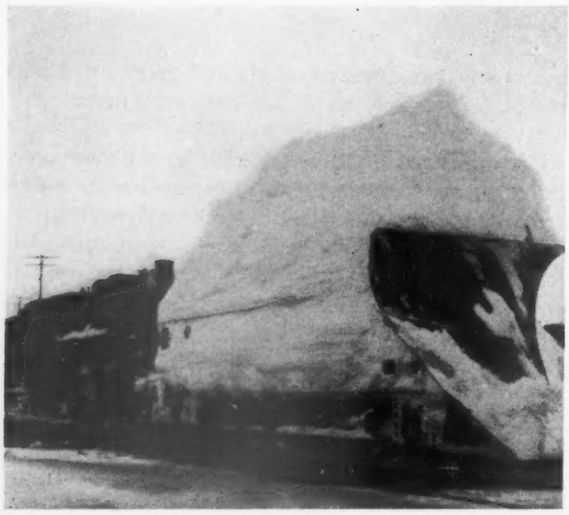
Full compliance with the secretary's program requires, from the railroads, little more than intensification of work that is done anyway. But the railroads owe it to themselves to make that extra effort to find those few additional tons of heavy scrap that might otherwise be overlooked—not just as part of a "drive," but because it is to their own interest to do so. They were one of the largest sources of heavy iron and steel scrap during the war; they can and should be one of the largest sources now.

BLIZZARD OF '49

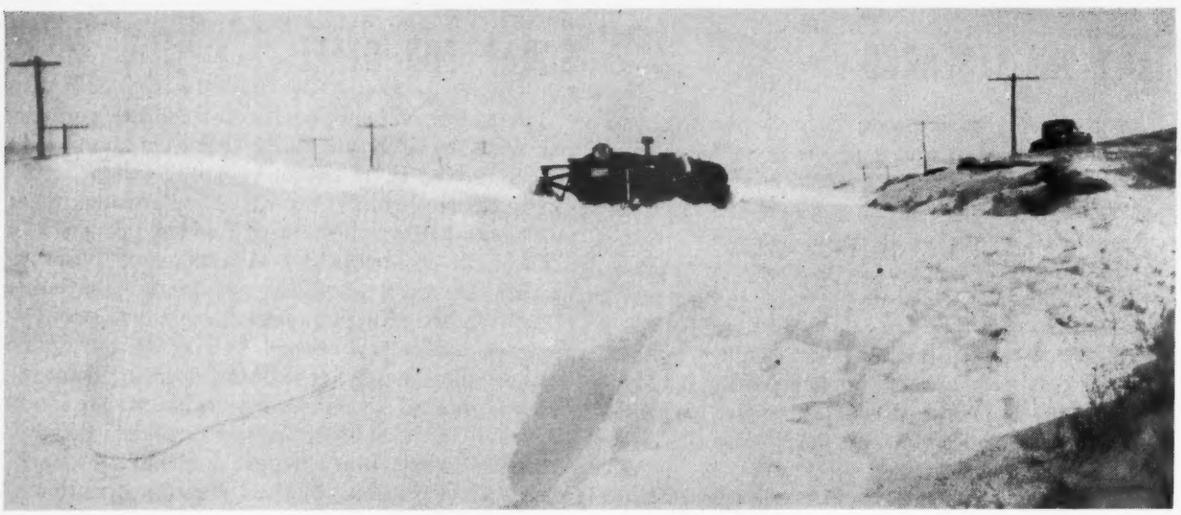
BY ROBERT G. LEWIS
Associate Editor
Railway Age

Western railroads learn new lessons — Find Diesels effective, off-track equipment indispensable, in battling record snow storms

STORY APPEARS ON PAGE 62



A wedge plow after backing out of a high drift. The plow went into the cut only the length of the gondola, a practice which proved effective in preventing snow crews from getting stuck

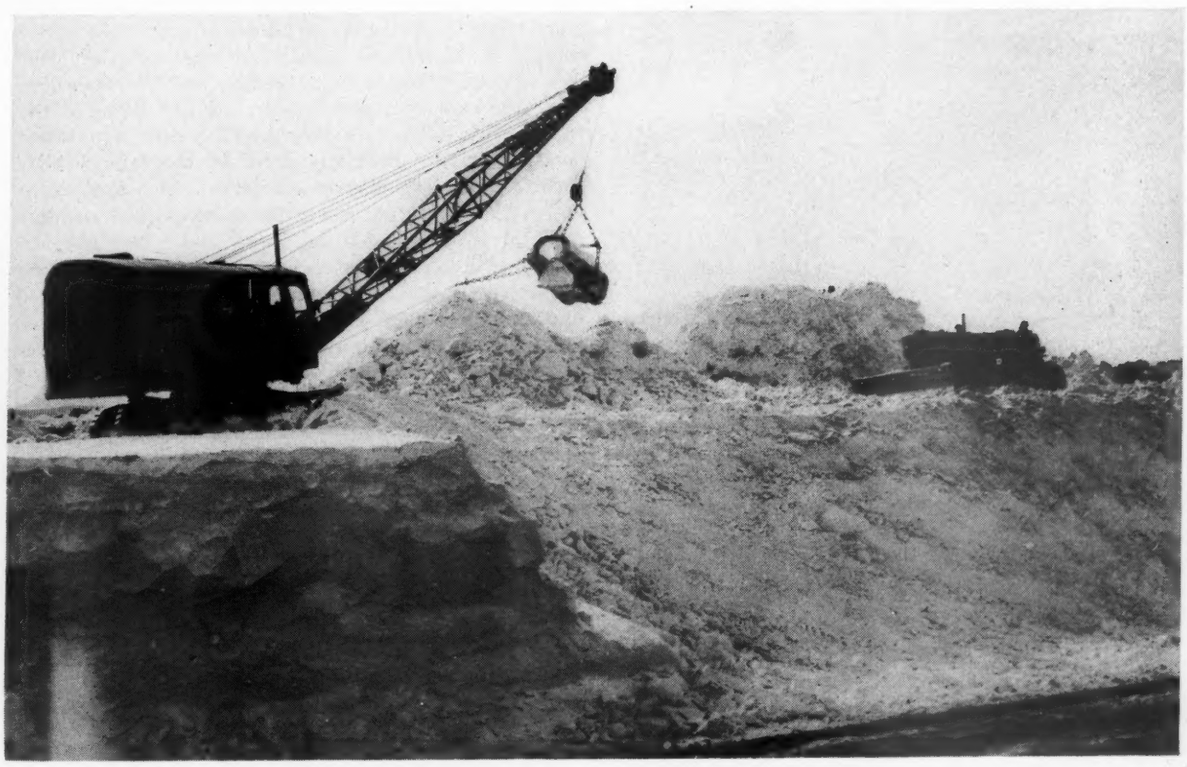


In addition to clearing yard trackage and widening cuts, spreaders were used to open main tracks

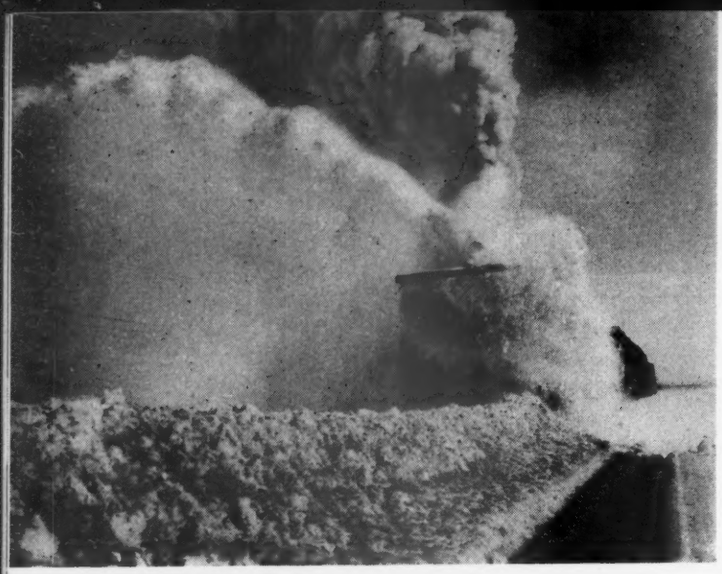
The bulldozer proved invaluable for widening cuts. Where this was not done, "ground blizzards" or new snow frequently refilled cuts in a few hours

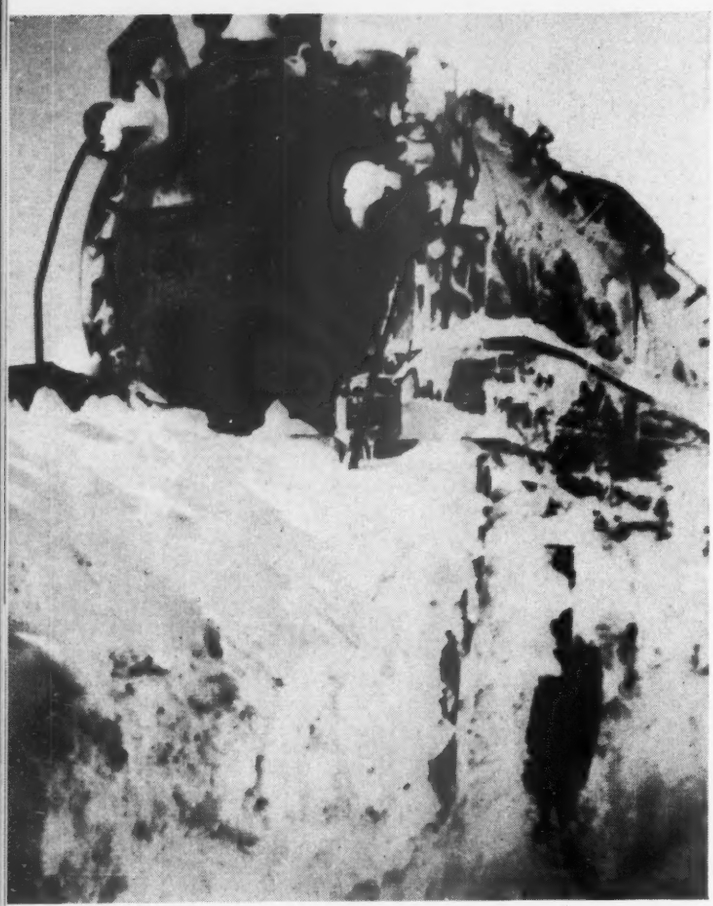
PRODUCES NEW STRATEGIES IN SNOW FIGHTING

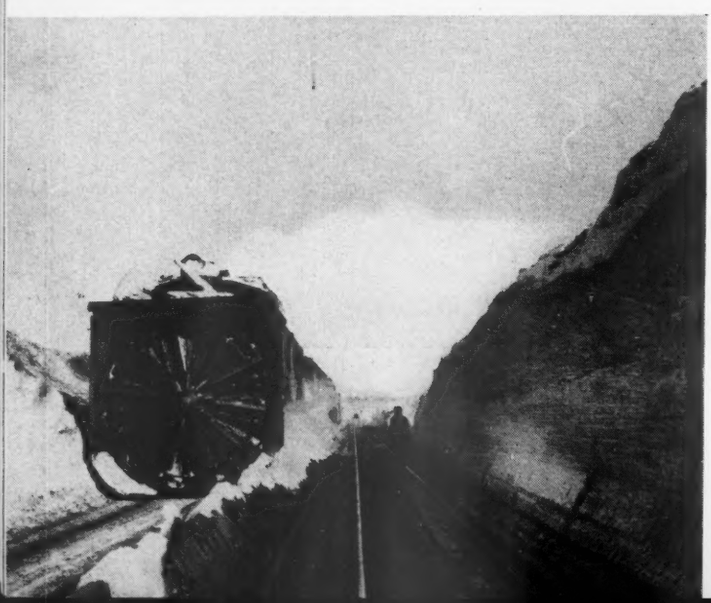
Spreaders were used to cut the "core" left by rotaries in double-track territory



Draglines and bulldozers worked in teams to widen deep cuts







s the Westerner of a century ago has been remembered for digging gold, the "49'ers" of the present century may well be remembered for digging snow. While the entire Central Western, Western and Northwestern United States suffered from an exceptionally bitter winter, the severity was most extraordinary and prolonged in Nebraska, Wyoming and South Dakota.

In much of this area the first severe blow of the winter struck in mid-November and successive storms gave railroaders no rest until mid-February. Forty-inch snowfalls and 35-ft. drifts were recorded. Winds reached 80 m.p.h. and were so erratic in direction that they complicated snow removal efforts. Redrifting occurred so rapidly that on occasions the Union Pacific found it necessary to use two rotaries—one at each end of snow-fighting trains—so they could back up to make second runs on drifts, or return to sources of fuel and water. The snow packed so tight and crusted so hard at times that heavy crawler cranes were able to run on its surface, and frequently dynamite was required to break the way for the operation of plows.

In the affected area, it was a winter that surpassed in scope, intensity and duration any in the memories of present-generation railroaders. To meet its challenge the railroads had to resort to new devices. At the same time they learned many new tricks in the utilization of standard snow-fighting equipment.

Wanted! A Diesel Rotary

Engineering and operating men who were in the field agree universally that there is a definite place for the rotary plow. During the blizzard period, there were in operation at least 23 rotaries in a tri-state area where, normally, this class of equipment is not used, unlike the Northwest and Sierra where they are "standard operating procedure." Some of the rotaries were built as long as 61 years ago—their purchase having been stimulated by the famous blizzard of '88. The severe service to which they were put in 1949 caused frequent breakdowns, and replacement parts often had to be improvised. One railroad officer—whose company had not used its rotaries since 1944—stated that this equipment proved "a pretty important machine," and he is recommending that rotaries hereafter not only be kept in good general re-

---

Top—Here, in double-track territory, one track has been opened by a rotary and the cut widened with a Jordan spreader-ditcher. The rotary is clearing the second track

Center—The fires had to be dropped from stalled steam locomotives when the water supply was exhausted. Most of the snow was unfit for water because of high sand content

Left—The rotary was indispensable in combating the 1949 blizzard

This line had been opened the day previous. Continuous turn-around operation of road Diesels helped to keep cuts from refilling in territory like this

pair, but that they be thoroughly overhauled and placed in top-notch condition each fall.

The chief failing of the rotary, however, proved to be its inability to work continuously because of its limited fuel and water supply. It is for this reason that officers of at least three western roads expressed their desire for a Diesel-powered rotary capable of remaining in service on the road for periods as long as a week. While it would be desirable to build a Diesel rotary which would be self-propelled, the investment in such a machine — with Diesel prime movers, generators and traction motors — would be excessive in view of the infrequency of its use. What would be more practical, they say, is a rotary on which the wheel would be propelled by a Diesel engine with a reversible gear reduction connection on the rotor shaft. The suggestion was made that a "packaged" Diesel engine—such as is used in 600-hp. or 1,000-hp. switchers—could be used to power the rotary—to be installed in the plow only when snow threatens.

Railroad men who had an opportunity to observe highway rotaries in action were impressed with their effectiveness. Practically all highway types have more than a single rotary—some have a number of bladed wheels and others employ vertical screws set in V-shaped plows. An internal combustion engine separate from the truck motor drives the rotary equipment. Observers state that these highway units, because of the design of the cutters, tend to draw themselves into the snow, and throw the snow at least as far as present railroad equipment—a desirable combination for railroad plows.

Any rotary equipment built new, or rebuilt, one officer states, should have all of the controls located at one point where the operator can both observe the track conditions and control the rotary wheel. Most existing units require the relay of instructions from an operator to an engineer.

One road, which operated an oil-fired rotary and a coal-fired rotary in contiguous areas, feels that if any new steam rotaries are acquired, oil-burning equipment should be specified. Oil-fired plows can carry fuel in auxiliary tanks, thus obviating the laborious and time-consuming task of getting coal from gondolas to steam-fired plows. The latter must be spotted for refuelling alongside a gondola on a side track, or where there is no side track open, a snow bank of the right height must be used as a platform from which to transfer coal from car to plow. These manual operations must be conducted under unfavorable weather conditions and by scarce and overworked employees.

Suggestions for Improvement

While some difficulty was experienced during high winds in keeping the burners lit in oil-fired steam locomotives, the fire on rotaries is better protected and wind-driven snow does not reach the firebox.

As a result of the blizzard experience, railroad officers offer the following suggestions for improving the operation of rotary equipment already on the roster:

(1) Provide increased water supply, using heated auxiliary tanks if necessary. (One road contemplates the use of old Mallet steam locomotive tenders for auxiliary water supply).
(2) Provide coal only of the best steaming quality—a good grade nut coal is usually best suited.
(3) Use the very best available water to prevent foaming when forcing the boiler.
(4) Increase steam pressure if boilers will stand it.

Opening Track with Wedges

One road had a rotary derailed 21 times in three days in a section where there was heavy ice at the rail level. This experience suggested the need for a rotary head which could be raised or lowered by steam or hydraulically and which would include a between-rail flanger with ice scarifiers. In fully-depressed position, the rotary head would ride on shoes on the rail surface. The flanger would break the ice and force it upward into the wheel. The bearing surface on the rail head would relieve the downward stress on the wheel and prevent mechanical damage which is frequently transmitted through the shaft of the machinery from this force.

While wedge plows did yeoman service in opening drifted track, mechanical officers indicated that many

present wedge plows need to be strengthened and carry heavier loads for use with the heavier classes of motive power. Most of the existing wedges were designed for propulsion by Consolidation class engines, whereas engines of the Mikado class and heavier are generally used today. Diesels were found too powerful for wedge operation. In one instance a 6,000-hp. Diesel was used with a wedge to open a line. Instructions were to push—not hit—the drifts. Ice formation held the wedge back; the Diesel kept pushing and something had to give. The rail buckled.

Gondolas used with wedges should have smooth outside surfaces, one chief engineer pointed out. Ribs, he said, increase the difficulty in backing out when snow gets packed around the car.

The following practices were used successfully in clearing lines with wedges:

(1) Glaze blades with ice by pouring water over the surface before starting plowing operations, to prevent snow from adhering to the blades.

(2) Where drifts are higher than the wedges, use two engines coupled tank to tank—the forward engine to push until almost stalled—the second engine to be "high-balled" in the opposite direction just before the stalling point. (Diesel road switchers proved excellent for use as the second engine).

(3) In very high drifts, cut no more at one run than the length of the plow. Back out rapidly to prevent getting stuck.

(4) Weld heavy steel plates to the car sides opposite the front and rear trucks, extending down as far as the bottom of the journal boxes, with openings at the journal lids. This practice prevents snow from becoming packed under the trucks and derailing the car.

Spreaders in Demand

Maintenance-of-way officers on three roads state that they could have used more spreaders, particularly the newer-type Jordans equipped with a high wedge plow that may be raised and lowered by air. Besides clearing yards, the spreaders were used effectively to widen and flatten cuts to prevent filling in by "ground blizzards" or new snow. The U. P. used spreaders in double-track territory to level the "core" left by rotaries. Using a spreader following a wedge, one chief engineer reported he had opened as much as a half mile of badly-drifted line in 17 min.

As with wedge plows, spreader blades will do a better job when glazed with ice at the beginning of a run.

The Diesel in Blizzard Operation

That the Diesel-electric locomotive is satisfactory for operation under blizzard conditions might best be attested to by the fact that, at one time, one railroad alone—the Chicago, Burlington & Quincy—had $15 million worth of this type motive power in snow clearing work exclusively. In one instance, after rotaries and wedges had opened a line where severe winds kept refilling cuts, a 6,000-hp. road freight Diesel was used in continuous turn-around service, running light between points about 40 mi. distant, keeping the line clear for operation. To quote one railroader, "A 6,000-hp. Diesel is the best damn 'snow blow' you ever saw for going through the loose stuff." The Chicago, Milwaukee, St. Paul & Pacific cleared its all-Diesel Mitchell (S. D.)-Rapid City line with 1,500-hp. road switchers coupled in multiple units. Diesels were in regular use where temperatures remained 28 deg. to 35 deg. below zero for long periods, and at extremes, 51 deg. below; one locomotive was not inside an enginehouse for 10 days.

The only winterizing of Diesels was the application of a fuel-oil heater, a practice found expedient by both the C. B. & Q. and the C. & N. W. to avoid difficulty in extreme cold or with oils high in paraffin content. This heater is a simple device installed in the suction line just ahead of the filter pump. It consists of 20 ft. of ½-in. copper pipe coiled in a 24-in. length of 5⅜-in. flue with end caps welded or bolted in place. Fuel for the Diesel engine passes through the copper coil which is surrounded by hot water delivered under pressure from the top of the engine through pipe connections to the heater, and thence to the make-up water tank. Water enters the heater at about 180 deg. F., and leaves at 160 deg. The temperature of the oil is raised about 70 deg. over what it was in the fuel tank under the locomotive.

No difficulty from extreme cold or snow conditions was experienced with Diesel locomotives or passenger trains powered by Diesels so long as water and fuel oil were available. Mechanical failures occurred only when these supplies were unobtainable. Trains tied up at terminals or division points were kept warm and comfortable.

Snow-fighting "Kinks"

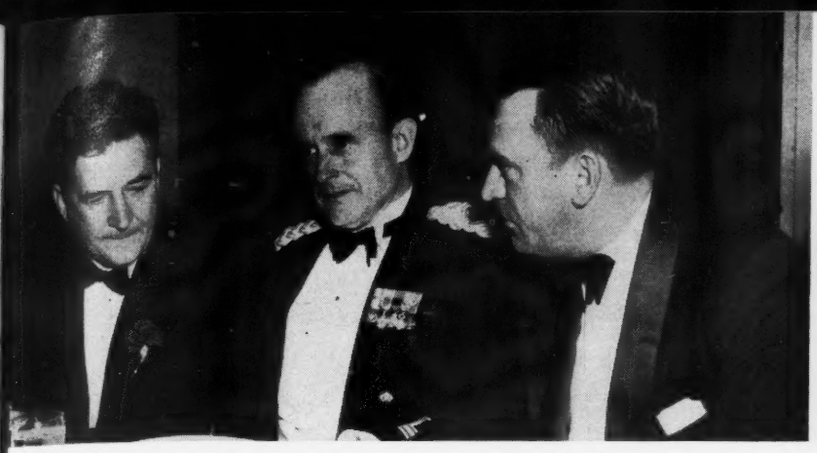
Old-timers at snowfighting stress the importance of getting steam engines and rotaries backed out of a cut instantly upon stalling, to prevent the engine heat turning snow to water which then forms ice on the rails.

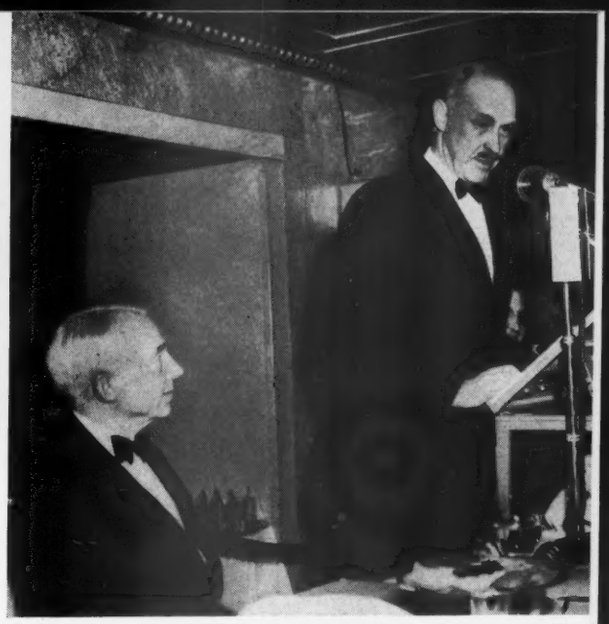
Immediately after lines are opened, it is important to check for rail burns at points where plows have been bucking heavy drifts. When driver burns result from engines stalled in snow, one chief engineer asserts, rail breaks are very likely to follow. The Burlington had to remove 120 rails in a 149-mi. line between Alliance, Neb., and Brush.

Small flame-throwers came in handy to thaw ice and snow when it was necessary to renew rails. The large flame throwers, according to one road which tried them, produce too much water on the track, and are too expensive to operate for large-scale snow removal.

The Union Pacific acquired a supply of surplus Army "parkas" for its men and found them so useful in reducing discomfort and in increasing the efficiency of workers that these garments are to be permanently assigned as a part of snow-fighting equipment.

As a general operating practice, it was found extremely advantageous—in the long run—to hold both freight and passenger trains at terminals, where facilities for fueling, heating, servicing and supplying them were available, whenever there existed even slight doubt as to the ability to get them through to the next terminal. Besides obviating the complications of caring for crews, passengers and freight on stranded trains, the job of opening lines was greatly simplified for snow crews when the lines were unobstructed from terminal to terminal.





F. R. P. ANNIVERSARY DINNER

This country's "last faint hope for railway progress" is a law which, among other things, would prohibit the re-election of members of the House of Representatives and senators, Robert R. Young, chairman of the Federation for Railway Progress and of the Chesapeake & Ohio, said in New York on March 2. Speaking at the federation's second anniversary dinner in the grand ballroom of the Waldorf-Astoria Hotel, Mr. Young said the United States will have truly representative government only when such a law goes into effect. "If we did not have re-election, if the members of Congress were truly a cross-section of our occupations and experiences. . . serving their country for, say, a single six-year term . . . do you think for one moment that our anti-trust laws would not have been invoked against labor, that we would be buying back our own Marshall Plan aluminum, laboriously growing and hauling, then destroying our potatoes, or that we could have been twice betrayed, caress by caress, in the house of the sadist and murderer—war—precisely where we were guaranteed we were not going?"

A highlight of the dinner was a televised mock jury trial on the subject, "Rail Travel vs. Air Travel: Which is More Advantageous?" Edward V. Rickenbacker, president of Eastern Air Lines, and Sigmund Janas, president of Colonial Airlines, were the witnesses for air travel. Testifying for rail travel were A. C. Kalmbach, publisher of Trains, and Walter Weir, president of Walter Weir, Inc.

CAPTIONS READ CLOCKWISE

Major General A. M. Gruenther (center), director of the staff of the Joint Chiefs of Staff, told the approximately 900 persons at the F.R.P. dinner that he did not consider World War III either imminent or inevitable. On his right is Governor Frank J. Lausche of Ohio, who presided at the dinner. On his left is Thomas J. Deegan, Jr., president of the federation

Drew Pearson, newspaperman and radio commentator, accepting the federation's award for meritorious service in initiating the "Friendship Train." On Mr. Pearson's right is Robert R. Young, federation chairman

A. F. Whitney (left), president of the Brotherhood of Railroad Trainmen, was a guest at the dinner. At his left are Messrs. Young and Lausche

Warren E. Walsh (left), a Pennsylvania conductor, received from Mr. Deegan the federation's annual award as the nation's "most courteous railroad conductor"

A.R.E.A. GOLDEN ANNIVERSARY MEETING

PALMER HOUSE, CHICAGO

Tuesday, March 15

MORNING SESSION—Grand Ballroom—9:45 A.M.

Address of C. H. Mottier, pres.
Report of Secretary
Addresses as follows:

Max Ruppert, pres., N.R.A.A.
J. H. Aydelott, vice-pres., A.A.R.
Ralph Budd, pres., Burl. Lines
H. T. Herld, pres., Ill. Inst. of Tech.

AFTERNOON SESSION—2:00 P.M.

Grand Ballroom

Reports of Committees

Roadway and Ballast
Roadbed Solidification, by Rockwell Smith, roadway engineer, A.A.R.
Ties
The Future of Timber Supply, by C. D. Turley, engr. ties and treat., I.C.
Economies of Railway Location and Operation
Maintenance of Way Work Equipment
Economics of Railway Labor

Red Lacquer Room

Reports of Committees

Iron and Steel Structures
Future of Structural Engineering in Relation to Railroad Bridges, by Shortridge Hardesty, cons. engr.
Impact and Bridge Stresses
What We Know About Impact, by A. B. Chapman, asst. ch. engr., C.M.St.P.&P..
Uniform General Contract Forms—Waterproofing—Wood Bridges and Trestles—Masonry
The Repair of Masonry Structures, by A. N. Laird, ch. engr., G.T.W.

EVENING SESSION—Grand Ballroom—8:00 P.M.

The Achievements of the A.R.E.A., by H. R. Clarke, ch. engr., Burl. Lines
Motion Picture—"Wheels A 'Rolling"—Entertainment

Wednesday, March 16

MORNING SESSION—Grand Ballroom—9:00 A.M.

Presentation and Approval of Manual Material
Addresses as follows:
The Effect of Diesel Operation on Fixed Property of American Railroads, by J. B. Akers, ch. engr., Sou. Sys.
Investigation of the Relation Between Track, and Equipment, by J. R. Jackson, mech. engr., Mech. Div., A.A.R.
Future of Soil Mechanics in Railroading, by Dr. R. B. Peck, res. prof. of soil mechanics, Univ. of Ill.
How Can the Railroad Construction and Maintenance Engineer Best Meet Increasing Cost of Labor and Material?
By Heavier Rail—F. R. Layng, cons. engr., B&L.E.
By Increased Mechanization—S. R. Hursh, asst. ch. engr.—maint., P.R.R.
By Roadbed Stabilization—T. A. Blair, ch. engr. sys., A.T.&S.F.

AFTERNOON SESSION—2:00 P.M.

Grand Ballroom

Reports of Committees

Wood Preservation
Recent Developments in Preservation Treatment, by Dr. Hermann von Schrenk, cons. timb. engr.
Track
Rail

Red Lacquer Room

Reports of Committees

Yards and Terminals
Records and Accounts
Buildings
Water Service
Recent Developments in Water Treatment, by R. C. Bardwell, supt. wat. sup., C.&O.

WEDNESDAY EVENING, ANNIVERSARY BANQUET
Address by W. T. Faricy, pres., A.A.R.
Address by James E. Gheen, philosophical humorist

Thursday, March 17

MORNING SESSION—9:00 A.M.

Reports of Committees

Highways
Achievements of Grade Crossing Protection, by W. J. Hedley, asst. ch. engr., Wab.
Cooperative Relations with Universities
Presentation and Approval of Manual Material
The Future of Research on American Railroads, by G. M. Magee, res. engr., A.A.R.
The Future Opportunities of the A.R.E.A., by E. M. Hastings, ch. engr., R.F.&P.

THE AMERICAN RAILWAY ENGINEERING ASSOCIATION

J. F. Wallace
First President

L. C. Fritch
First Secretary

TO 1949

Its Fiftieth Anniversary is the occasion for a condensed review of the history and achievements of the A.R.E.A.—Subsequent pages contain pictorial features depicting the association at work and its related research activities

Early photograph of Steinway Hall where the A.R.E.A. held its first convention in 1900

When introductions had been completed, the small group of men that had gathered in a room at Chicago's Auditorium Hotel came to order and faced the temporary chairman. The date was October 21, 1898, and the assemblage of 17 men consisted, with one exception, of railway engineering, maintenance and operating officers. The exception was the temporary chairman, at whose request those present had assembled to consider a matter of utmost importance. He was Harry P. Robinson, editor of *Railway Age*.

ONCE IN HALF A CENTURY

The Fiftieth Anniversary meeting of the American Railway Engineering Association has been made the occasion for a series of events of surpassing interest in the history of this association. In the number and character of the addresses to be heard, and in other respects, the program (opposite page) shows wide deviation from usual practice. Other features of "Engineering Week" at Chicago include a display of 600 photographs depicting 50 years of railway engineering progress, and a record exhibit of manufacturers' products, sponsored by the National Railway Appliances Association.

Organization Meeting

When the meeting adjourned later the same day the foundation had been laid for a new association of railway engineering and maintenance officers. The first action had been to select Augustus Torrey, chief engineer of the Michigan Central, as chairman, and L. C. Fritch, superintendent of the Baltimore & Ohio Southwestern, as secretary. A motion to form a new association had then been passed, and the decision had been made to name it the American Railway Engineering and Maintenance of Way Association. Finally, a committee had been appointed to draft a

constitution and by-laws, with instructions to have its report ready for consideration at a meeting to be held in Buffalo, N. Y., in March, 1899.

Year of Birth—1899

Working under difficulties, the committee appointed to draw up a constitution, headed as chairman by J. F. Wallace, assistant second vice-president of the Illinois Central, completed its task within the allotted time, permitting the Buffalo meeting to be held on March 30, 1899. At that gathering the constitution was presented and adopted, a slate of officers was elected — and the new association formally came into existence. Mr. Wallace was elected president, and Mr. Fritch secretary. These men, together with Mr. Torrey, had taken on their shoulders the responsibility and most of the work involved in piloting the organization through its period of infancy, and they are regarded by many as the fathers of the association.

The constitution provided for the creation of standing committees through which the association would attack the technical problems in its field of endeavor. Following the meeting of 1899 no time was lost in setting up a roster of committees, in assigning personnel to them, and in getting them started on their assignments. Called the "outline of work" this original roster provided for 14 standing committees. To keep pace with changing conditions the committee roster was thereafter in almost a constant state of flux, with the number of committees gradually increasing until it totalled 28 in 1937. Subsequent changes have brought the number to 21 at the present time.

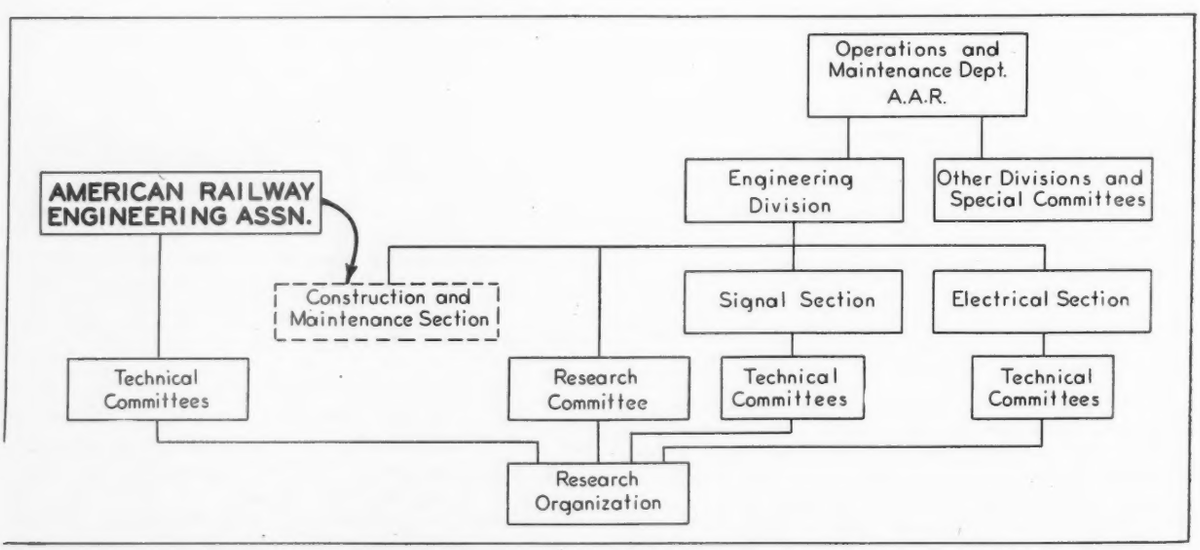
The first regular convention was held on March 14 and 15, 1900, at Steinway Hall in Chicago, a structure still in existence, directly across Van Buren street from the present office of the secretary. Before 101 members and guests reports were presented by all except one of the 14 standing committees. The magnitude of the attendance, the keen interest manifested in the proceedings by those present, and the spirited discussion that followed the presentation of each report—these were evidence enough that the association already was on a solid footing.

Chicago the Meeting Place

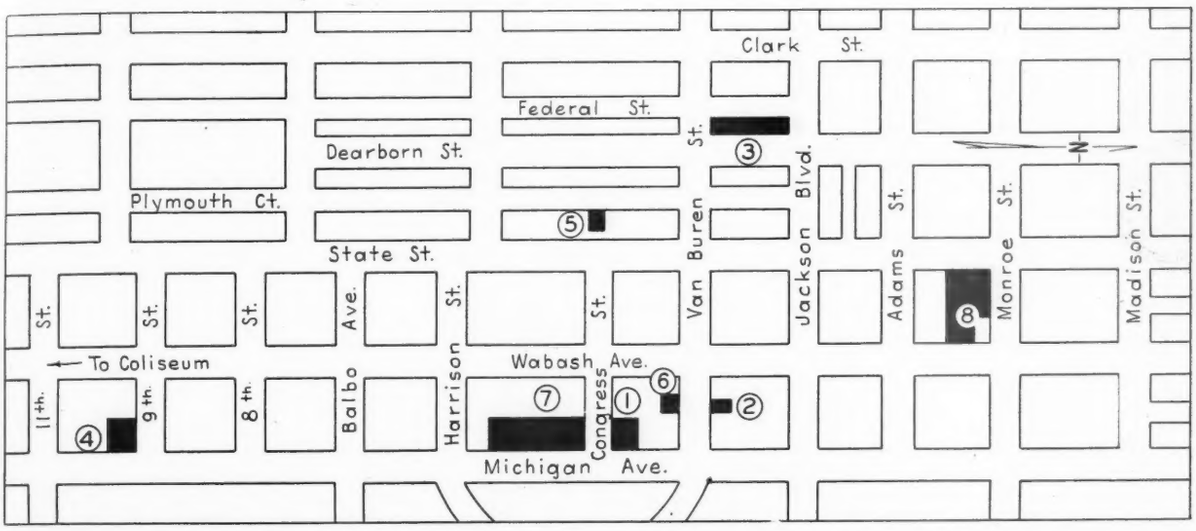
All annual meetings of the association have been held in March at Chicago, which is fixed as the location of such meetings by a constitutional amendment adopted early in the association's history. There has been a meeting in every year except 1943 and 1945 when war conditions required that the annual meetings be cancelled. All the meetings have been three-day affairs, except the first one and those held during the period from 1931 to 1934, inclusive, when business conditions required that they be restricted to two days.

Since shortly after it was founded the association has maintained an office at Chicago with a full-time secretary in charge. Following each of its annual meetings a volume of proceedings has been published, and since 1902 monthly bulletins have been issued, which are devoted principally to the advance publication of committee reports. In 1905 the association published the first edition of its Manual of Recommended Practice. Subsequent editions were issued in 1907, 1911, 1915, 1921, and 1929, all in bound-book form. In 1937, primarily to simplify the problem of keeping the Manual up to date, it was brought out as a loose-leaf volume, and two subsequent printings of the book have been made in this form.

In 1911, through a constitutional amendment, the name of the association was shortened to its present form. At various times other amendments have ef-



LEADS A "DOUBLE LIFE"—This chart shows how the A.R.E.A., while a s parate entity in itself, is also the Construction and Maintenance section of the Engineering division, Association of American Railroads. Thus, the president and secretary of the A.R.E.A. are also the chairman and secretary, respectively, of the Construction and Maintenance section. The committees of the A.R.E.A. have a similar dual status, thereby permitting them access to the resources of the research organization of the A.A.R. in making technical investigations



HISTORICAL "HEART" OF THE A.R.E.A—In a Chicago area roughly four blocks wide and nine blocks long have occurred most of the significant events in the history of the association. The numbered locations on the map are as follows: (1) Auditorium Hotel, where the preliminary meeting was held on October 21, 1898, and the location of the annual meetings from 1901 to 1909, inclusive; (2) Steinway Hall, where the first convention was held March 14-15, 1900; (3), (4), (5) Locations of secretary's office during early years; (6) Present location of secretary's office; (7) Congress Hotel, where annual meetings were held from 1910 to 1926, inclusive; (8) Palmer House, scene of the annual meetings since 1927

fected changes, some of considerable importance, in the internal organization of the association, but the basic tenets of the original constitution have not been disturbed.

Relationship with the A.A.R.

One of the most significant changes in the status of the association has been the series of events that brought about its present relationship with the Association of American Railroads. A movement was started in about 1916 to bring various voluntary associations of railway officers, such as the A.R.E.A., into affiliation with the American Railway Association (predecessor of the A.A.R.) as dependent groups of the parent organization. This proposal was resisted by the A.R.E.A. for acceptance would have meant giving up its independent status. Instead, it agreed to affiliate with the A.R.A. as the Construction and Maintenance section of the latter's Engineering division, while retaining its separate identity and existing type of organization. When, in 1934, the A.R.A. was consolidated with other organizations to form the A.A.R., the engineers' group, again resisting pressure to relinquish its independent status, insisted on an agreement similar to the one previously in effect with the A.R.A, and the arrangement set up under this agreement still prevails today.

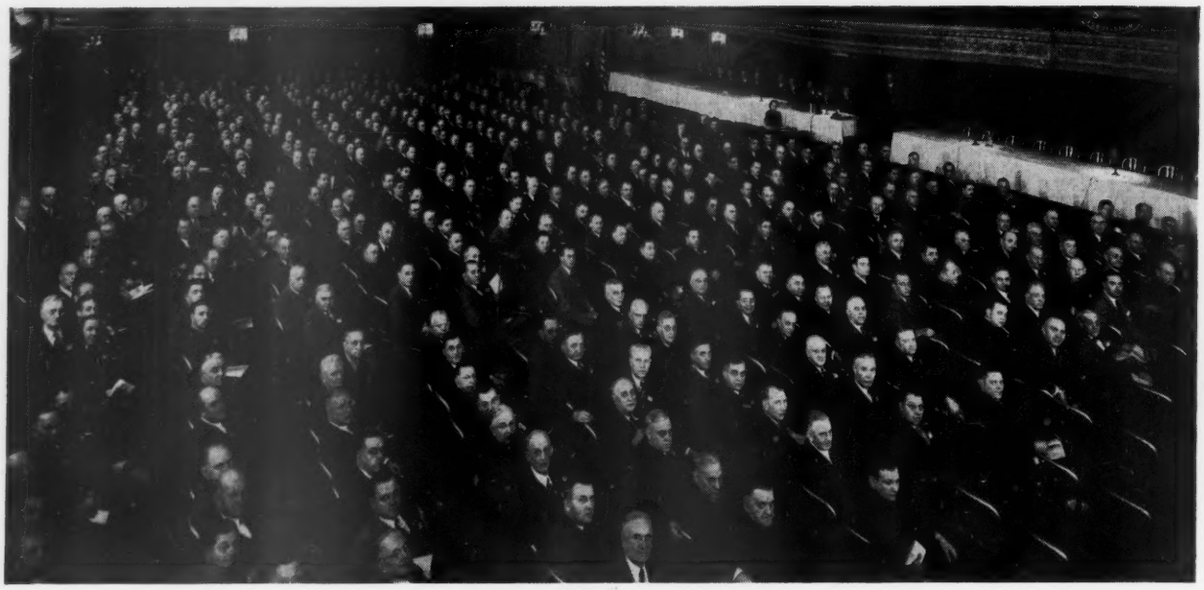
The relationship of the A.R.E.A. with the A.A.R. is shown by the accompanying diagram. An important advantage in this arrangement for the A.R.E.A. is that its committees are in a position to receive financial aid from the parent group in carrying out research projects; furthermore, they can refer problems requiring technical investigation to the research engineer of the Engineering division.

This recitation of the bare facts in the origin and development of the A.R.E.A. gives only one, and possibly the least important, side of its history. The other side deals with the reasons for its existence and with its accomplishments. Those who took the initiative in organizing the association had two principal objectives in mind. One was to bring some degree of standardization or uniformity of methods, practices and designs into a situation that could only be described as chaotic, and the other was to establish an agency for promoting badly-needed technological progress in the railway engineering field.

The record is ample evidence that the association has succeeded on both counts. Through the recommended practices and specifications promulgated by its committees and published in the Manual a large measure of uniformity now prevails on American railroads in every detail of policy governing the design, construction and maintenance of the railroads' fixed properties.

With respect to the other objective—technological progress—the association's efforts have been rewarded with corresponding success. Through systematic study, investigation and research the association has evolved improved practices, ranging from designs for track fastenings to the development of an impact formula for use in bridge design, which have brought about great enhancement of safety and economy in design, in construction, in maintenance, and in the operation of railway properties.

In addition to these major accomplishments the A.R.E.A. has exerted an enormously constructive influence in promoting a feeling of unity of purpose among railway engineers, in serving as an agency for the education and development of these engineers, in promoting closer relationship between the railroads and universities, and in providing a medium for the prompt and widespread dissemination of useful information on the design and maintenance of railway properties.



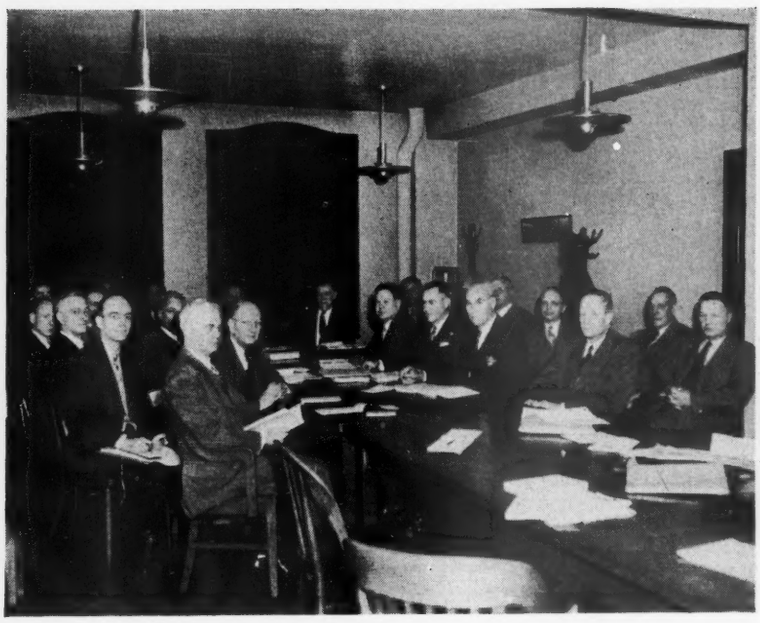
Each year's work culminates in the annual meeting. This view was taken in 1947

Heavy responsibilities rest on the shoulders of Walter S. Lacher, secretary, who has held that position since 1937

THE ORGANIZATION AT WORK

Behind the achievements of the A.R.E.A. is an efficient organization thoroughly imbued with the belief that hard work, wisely directed, is the way to success. In this organization the three principal components—the Board of Directors, the secretary and his staff, and the 21 standing committees—function as a team in studying technical problems, in compiling the findings into committee reports, in issuing the annual Proceedings and other publications, and in keeping up to date the Manual of recommended practice. This team is at work throughout the year and much of its effort consists of preparations for the annual meeting at which the principal activity is the consideration

Secretary Lacher is assisted by a staff of six persons. Shown here are (left to right) MissNancy Campbell, stenographer; Edward G. Gehrke, assistant to secretary; and Emil Fritch. Frank McNellis, assistant secretary, was not present



Left—The Committee on Economics of Railway Labor inspecting track on the Delaware & Hudson. Right — The committee on Wood Bridges and Trestles in session at the association headquarters at Chicago

of committee reports and the recommendations contained in them.

Many diverse activities are required in performing the work of the association. Each committee normally holds several meetings during the year, and often these meetings take the form of inspection trips to study specific developments at first hand. Meetings are held, as necessary, by the Board of Direction and its committees, and the secretarial staff has a full-time job in carrying out the duties assigned to it. Some of these activities are portrayed in the accompanying pictures.

Right—Last-minute details of the pictorial exhibit are settled around a luncheon table at Chicago Engineers' Club. Left to Right—John E. Fanning, asst. to ch. engr., I.C.; George E. Johnson, representing the N.R.A.A.; President C. H. Mottier of A.R.E.A.; and J. de N. Macomb, chairman, Historical Committee

The Chicago Engineers' Club is a favorite meeting place of the committees, as for this recent meeting of the Committee on Buildings

Above—Research committee of the Engineering division, A.A.R., discussing matters of policy with G. M. Magee, research engineer. Left to right—C. G. Grove, ch. engr. m. of w., West. region, Penna.; H. R. Clarke (chairman), ch. engr., Burl. Lines; Secretary W. S. Lacher of Engineering division, A.A.R.; Mr. Magee; and T. A. Blair, ch. engr. sys., A.T. & S.F.

Below—Mr. Magee (left) and E. E. Cress, assistant research engineer, examining model of the A.A.R. research building soon to be constructed at Technology center, Chicago

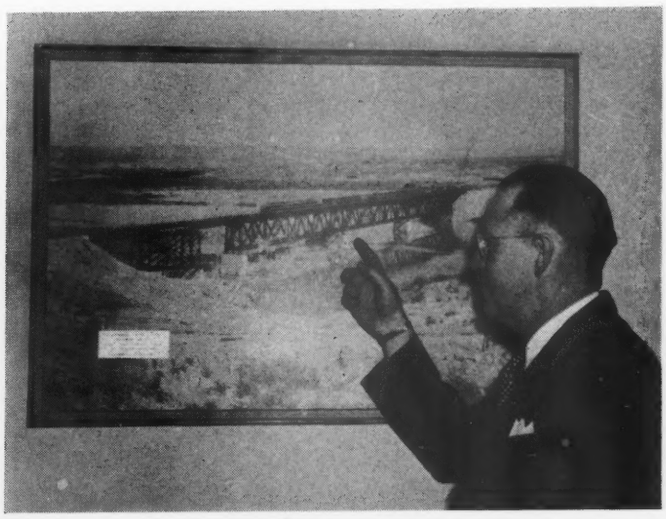
RESEARCH ACTIVITIES IN OFFICE.

In recent years the American Railway Engineering Association has been placing increasing emphasis on scientific research as a means of solving technical problems. The agency through which such work is carried out is the research organization of the Engineering division of the Association of American Railroads. This organization is headed by G. M. Magee, who has the title of research engineer, and includes 24 full-time engineers and technicians. In addition, use is made of the personnel and facilities of various outside laboratories. To exercise general supervision over the work of the reseach organization, the Engineering division has a Research committee, which is composed of three top-ranking engineering officers located at Chicago.

Most of the research projects undertaken by Mr. Magee and his staff are sponsored by the technical committees of the A.R.E.A., and the results are incorporated in the annual reports of the committees. The growth in the volume of such work is shown by the increase that has occurred in the annual appropriations made by the A.A.R. for financing it. The appropriation in 1938 amounted to $78,158; for 1949 it is $372,451.

Key figures in the reseach organization are pictured on these pages.

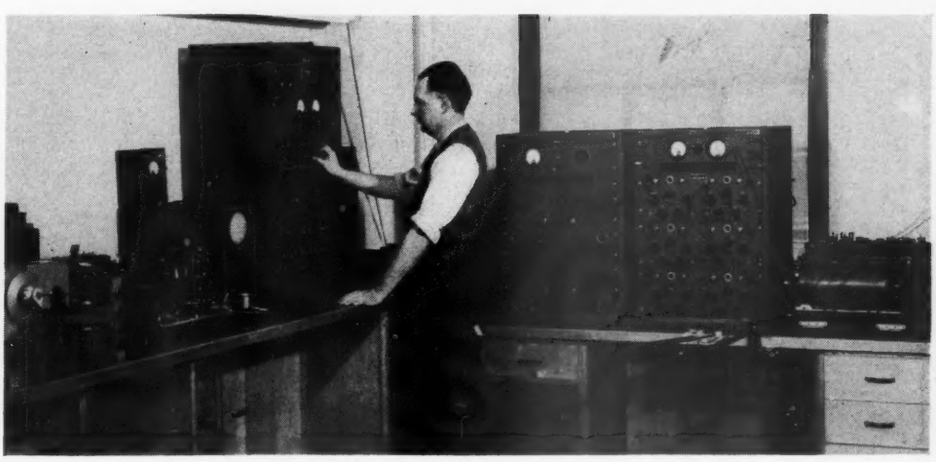
Above—Rockwell Smith (kneeling), roadway engineer on the research staff, calibrating a soil pressure measuring gage in an air chamber. The step is preparatory to making soil-pressure measurements under the ties at a location on the C. & N.W.



Above—E. J. Ruble, structural engineer, with photograph of Santa Fe's bridge across Colorado river, one of many bridges in which Mr. Ruble has made stress measurements to determine effect of impact and other factors

FIELD AND LABORATORY

Right—H. E. Durham, track engineer, checking loss of bolt tension in test of spring washers for crossing frogs



In the electrical laboratory of the research staff in the A.A.R. offices at Chicago. Randon Ferguson, electrical engineer, adjusting amplifiers for stress-measuring equipment

NEW AND IMPROVED PRODUCTS OF THE MANUFACTURERS

Installing Durisol roof plank

Composition Roof Plank

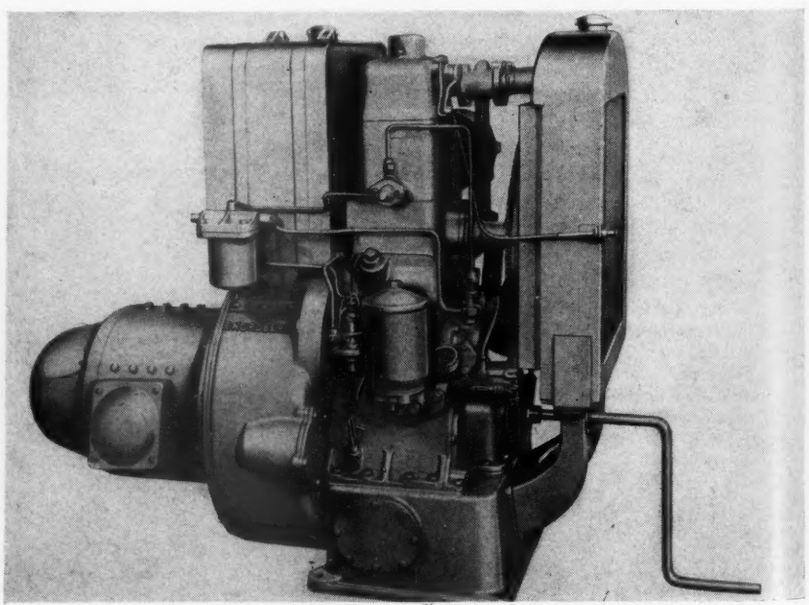
1 Durisol, Inc., New York, is introducing a lightweight roof plank made of mineralized wood shavings and Portland cement, molded under pressure and reinforced with steel. It is said to be highly resistant to fire, moisture, fungus, rats and termites, and to provide insulation and sound absorption, as well as to form the deck for built-up roofing.

Nordberg Diesel Engine

2 The Nordberg Manufacturing Company, Milwaukee, Wis., has added to its line of Diesel engines, a heavy-duty, vertical-type, four-cycle, single-cylinder unit, known as Type 4FS-1, for operating small generators, pumps, and other power units, either through a direct connection or a belt or chain drive. The engine has a 4½-in. bore and a 5¼-in. stroke, and is rated at 10 hp. at 1,500 r.p.m. and 15 hp. at 1,800 r.p.m. It is completely self-contained, ready for service, and its 10-gal. tank provides fuel for 12 hr. of operation at full load.

The engine is designed with full pressure lubrication of all crankshaft, connecting-rod, piston-pin, camshaft and rocker-arm bearings. The piston is splash lubricated by the oil emitted from the connecting-rod bearing at the crank webs. The engine is equipped with an impeller-type cooling-water pump, belt driven from the crankshaft, which circulates water from the radiator to the cylinder block, where it flows upward around the cylinder liner and into the cylinder head passages, cooling the combustion chamber, fuel nozzle, fuel injector valves and exhaust passages. The water returns to the radiator after passing through the outlet manifold at the top of the cylinder head. A thermostat and recirculating connection give automatic control of the cooling-water temperature.

The engine is equipped with a diaphragm-type fuel-oil transfer pump, adjusted to deliver fuel at a pressure of about 3 lb. through a filter to the fuel-injection pump. The latter pump delivers fuel oil at high pressure through extra heavy steel tubing to the injector nozzle in the cylinder head. A vent line from the spray nozzle returns excess oil to the main fuel supply. The engine is available with hand or electric starting.



The Nordberg 4FS-1 Diesel engine with electric generator

Greater Strength for Rail Holder

3 The Morrison Railway Supply Corporation, Buffalo, N. Y., has announced further improvements in the Morrison Adjustable Rail Holder to provide an overall gage-holding strength equal to that of the component parts of the device. The rail holder consists of a wing plate, designed to be fastened to two adjacent ties, a tension rod threaded at one end and welded to the wing plate at the other end, and a jaw casting which fits over the base flange of the rail and which is pulled tight against the rail by an adjusting nut at the end of the tension rod.

In the improved gage holder the wing plates have been increased in width to 6 in., and a better type of locking nut has been adopted, by means of which very minute adjustments are said to be

A Morrison Adjustable Rail Holder on a heavy-traffic curve

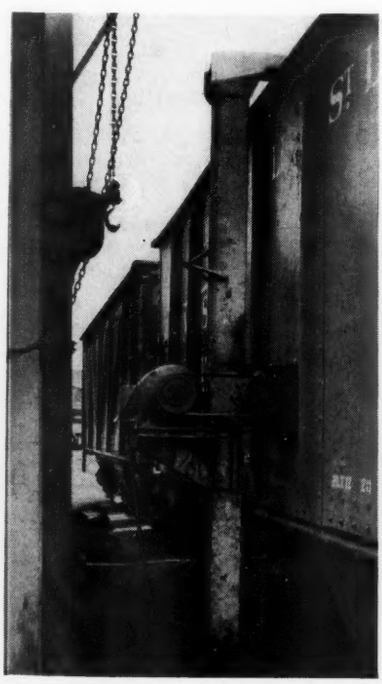
possible. Furthermore, the manufacturer no longer insists that, for satisfactory service, the wing plates be fastened to the ties by screw spikes or lag screws only; either the ⅝-in. or 9/16-in. cut track spike may be used. The rail holders, when applied to curved track or turnouts according to recommended patterns, are said to supply sufficient holding power to resist excessive lateral pressures in the track due to normal train operation.

Car Shaker

4 The Ross & White Co., Chicago, has developed a device, consisting essentially of a steel column equipped with a vibrating mechanism, for shaking hopper-bottom cars to facilitate the discharge of materials. The mechanism, supported on the column by a pin through any of a series of holes in the column, embodies a steel plate which is vibrated by a 5-hp. motor through an eccentric drive.

In operation the column is suspended alongside the car by a large hook that fits over the top of the car, and the plate is pulled into contact with the car side by a chain leading from the bottom of the column to the underneath framework of the car. The vibrator is then set in motion by a push-button control, transmitting rapid vibrations to the whole car frame.

The series of holes in the column provides means for varying the height of the vibrating mechanism in relation to the car side. To lift the unit to and from the operating position a revolving stiff-legged crane with a monorail chain hoist is provided.



The Ross & White car shaker in position on a coal car

Built-Up Aluminum Roofing

5 The Reynolds Metals Company, Louisville, Ky., has developed a built-up roofing consisting of sheets of commercially pure, annealed and soft-embossed aluminum, 0.004 in. thick, bonded together with asphalt. The material, it is said, can be used with any standard mopping asphalt on any kind of roof deck, old or new. In its application no drastic changes in roofing methods are involved and no special skills are said to be required; the aluminum sheets simply replace the layers of felt commonly used on built-up roofs.

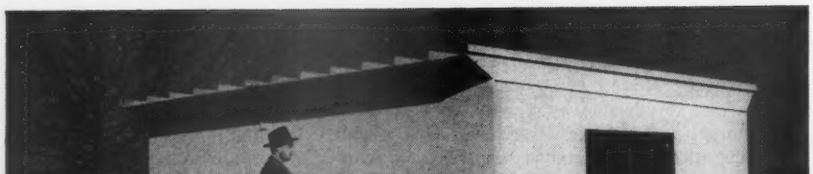
The material is available in 60-lb. rolls, each roll containing a sheet 36 in. wide by 360 ft. long. One roll, therefore, will cover approximately 10 squares of roof area. Each roll is marked to show side laps and staggered-layer center lines. To apply the material the roof deck is first covered with a layer of 30-lb. asphalt felt which is mopped with hot asphalt and topped with a layer of Reynolds embossed aluminum. The latter layer is then mopped with a layer of hot asphalt into which the top layer of aluminum is carefully broomed, completing the roof.

Applying a built-up roof of Reynolds embossed aluminum

Portable Drink Carrier

6 The Dixie Cup Company, Easton, Pa., has developed a portable beverage dispensing unit that can be used to good advantage in

providing a sanitary drinking water service for bridge and building gangs and extra gangs. The carrier is a double-walled, stainless steel, fully insulated tank with spigot, with a paper cup dispenser mounted on the lid of the tank. Weighing approximately 35 lb. when filled to its capacity of more than eight quarts, the unit is carried in front of the vendor by an over-the-head strap. The tank is said to keep beverages, either hot or cold, at the desired temperature for longer than two hours.



Armco Steelox prefabricated building with the shed-type roof

Steelox Buildings with Shed-Type Roof

7 Armco Drainage & Metal Products, Inc., Middletown, Ohio, has announced that the Armco Steelox prefabricated building, heretofore offered only with the gable-type roof, is now available with the shed-type roof. This design eliminates need for wind bracing, thereby further simplifying assembly of the building and reducing costs.

Buildings with the new roof are available in sizes ranging from 4 ft. by 4 ft. to 12 ft. by 24 ft., and in eave heights from 6 ft. 8 in. to 8 ft. Standard single and double-swing doors, sliding doors and windows are provided as with the gable-roof Steelox buildings.

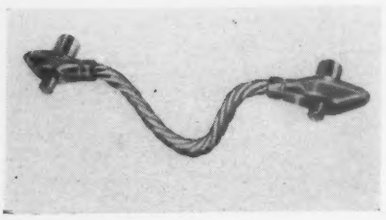
Raco Rail Bonds

8 Two new Raco rail-head bonds — one punch-driven and the other hammer-driven — are being offered by the Railroad Accessories Corporation, New York. These bonds are reported as meeting all of the requirements of the Signal Section, A.A.R. The strands in both bonds are bronze.

The punch-driven bond — designated No. 600 — employs terminals of cold forged copper beveled sharply downward so that, when installed, the danger of their being hit by dragging equipment is reduced to the minimum. Other features include the ability to be extracted and redriven without loss of fit. This bond is available with the strand bent downward at angles of 30 or 60 deg. from the horizontal, as desired.

The hammer-driven bond is designated No. 850. It imploys a soft steel terminal which is drilled completely through to produce a tube easily expanded throughout its length. A copper contact pin and a steel driving pin are inserted in the tube at the time of manufacture. On installation, the copper pin is driven into tight contact with the rail and, at the same time, the pin expands laterally in all directions, also expanding the tube against the rail. Like the punch-driven bond, the No. 850 bond is available with the strand bent down 30 to 60 deg., as desired.

The Raco No. 600 bond is punch-driven

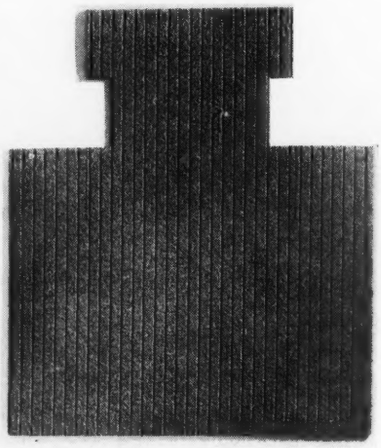


The Raco No. 850 hammer-driven bond, with pins in place

Wind-Resistant Asphalt Shingle

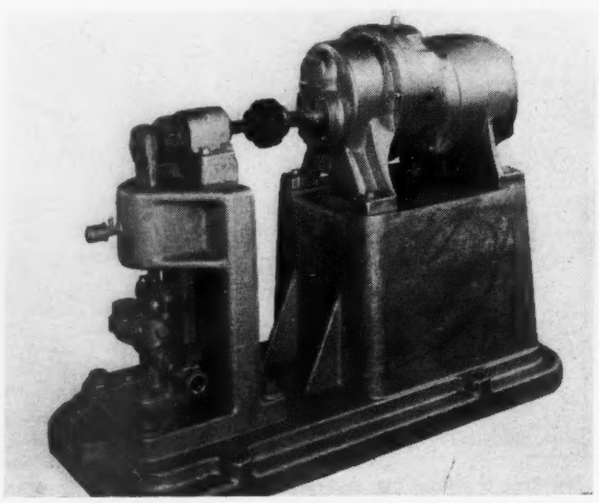
9 The Lehon Company, Chicago, is offering an asphalt shingle especially designed to withstand high winds. Called the Mule Hide Safe-Lox, the shingle is of the interlocking type and, when applied, presents an unbroken roof surface that has a double thickness over the entire roof area and a triple thickness over a portion of it. Each shingle is secured to the roof by four nails and has four points of interlocking.

The Safe-Lox shingle incorporates the typical Mule Hide corduroy construction, said to increase resistance to weathering. It weighs 225 lb. per square and is available in shamrock green, ebony black, green crest, and campfire.



Improved Chemical Pumps

10 The Dearborn Chemical Company, Chicago, has announced that its Type "SR" and "ER" chemical



One of the improved Dearborn Chemical pumps for feed-water treatment

pumps for feed-water treatment have been redesigned to incorporate new heavy-duty motorized reduction gears. It is said that greater power and efficiency, quieter operation and reduced maintenance have been obtained.

Other features of the new pumps include an improved base casting which provides additional support, and a pump packing in which the lantern ring has been eliminated and spring loading of the Chevron type substituted therefore. The new packing arrangement is said to eliminate the possibility of damage from excessive tightening.

Weed Killer Formula 7B-D

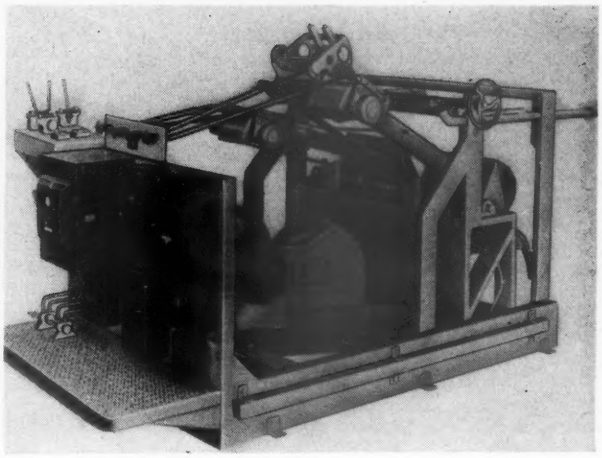
11 The General Chemical Division, Allied Chemical & Dye Corp., New York, is offering a weed killer, known as formula 7B-D, which is available in 50-gal. drums. This material is especially designed for application by low-pressure knapsack sprayers or power spray rigs to weed growths in the vicinity of yard tracks, industrial spurs, bridges or pole lines. One drum is said to treat 2½ acres.

The weed killer is a toxic aromatic oil containing a high concentration of trichloroacetic acid, pentachlorophenol, and 2, 4-dichlorophenoxyacetic acid. It is diluted at point of use with crude fuel oil, Diesel fuel oil, or kerosene, in the ratio of 1 to 8 or, for less resistant types of weeds, 1 to 12. It is said to kill all types of vegetation and to suppress new seedling growth. The user is cautioned by the manufacturer to avoid drifting of spray to cultivated vegetation.

Pole-Peeling Machine

12 The Taylor-Colquitt Company, Spartanburg, S. C., has announced a number of improvements in the design of the T-C pole-peeling machine. This machine is an automatic unit through which poles are fed longitudinally and at the same time rotated under floating cutter heads with helical knives in such a way that knots and bark are removed, giving the poles a smooth, natural-contoured finish. All operations of the machine are under finger-tip control by the operator from one position.

The improvements in the machine include the use of compressed air to raise and lower the cutting heads and to shift the transmission mechanism; a small air cylinder, controlled by valves within easy reach of the operator's foot, for locking the cutting heads rigidly in position, with means for adjusting the cutting heads while locked; self-alining bearing for the cutting heads to relieve stress and to prolong their life; a new position of the operator's panel further removed from the rotating wheels, permitting delivery of the poles to the machine by a conveyor; and air-operated lifts to place the poles on the machine.



The improved T-C pole peeling machine

Full-Vision Cab for Traveling Cranes

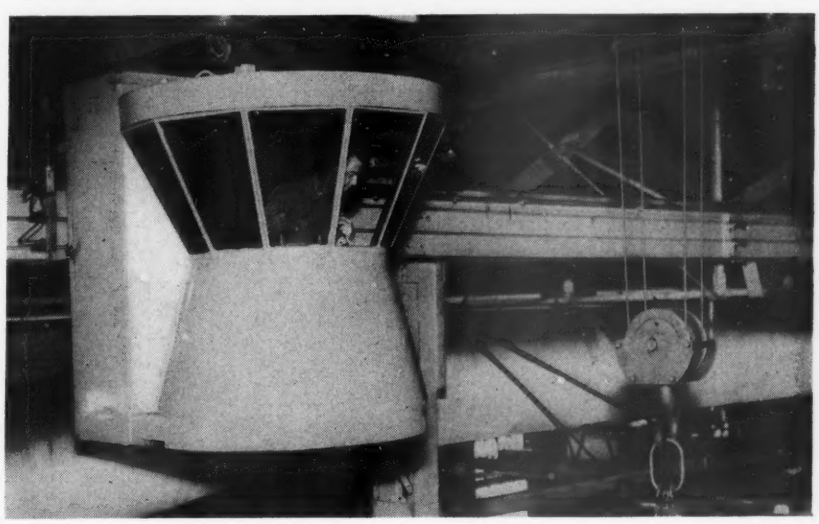
13 The Whiting Corporation, Harvey, Ill., is introducing, for application to shop traveling cranes, a full-vision crane cab designed to reduce operator fatigue and enhance safety in crane operation. In appearance the cab resembles a segement of an hour glass, two-thirds of a circle in extent, with the upper half enclosed with glass, so the operator can see laterally through 240 deg. and also almost straight down.

The lower half of the cab contains a comfortable operator's seat and the controls. The cab is weather-proof and may be fitted with air-conditioning, telephone communication and fluorescent lighting, if desired.

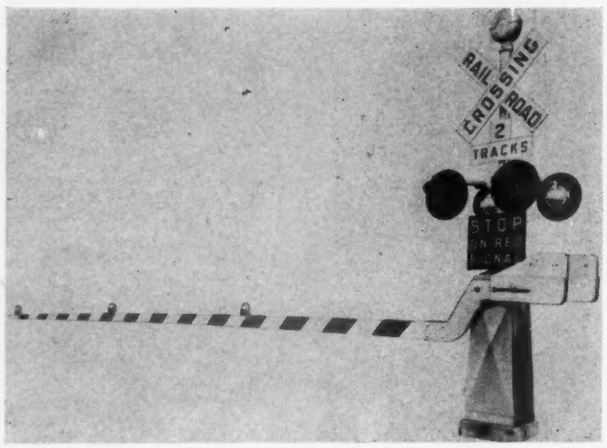
Griswold Crossing Gate

14 The Griswold Signal Company, Minneapolis, Minn., has announced a railway-highway grade crossing gate which is designed to create an attractive appearance as well as to provide dependable protection. One of its outstanding features is the use of both power and gravity in the gate-arm descending mechanism, which is said to provide positive operation under severe climate conditions. The arm is available in lengths up to 40 ft. A sidewalk arm can be added, if desired.

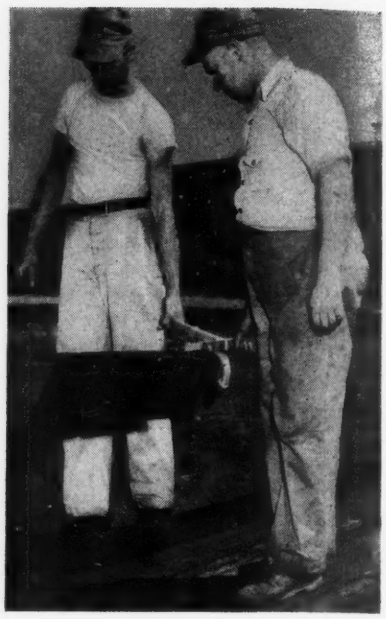
The crossing gate is anchored to the ground and not on a pole and mast, for improved rigidity and appearance. Precast foundations are available to speed installation. The gate-arm supports are aluminum-magnesium alloy for light



The Whiting full-vision crane cab



Left—The new Griswold crossing gate



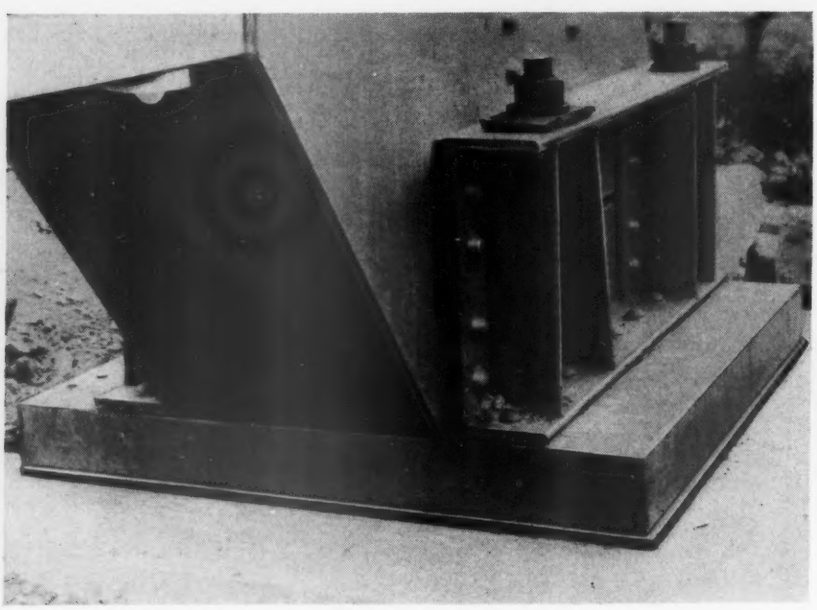
weight and resistance to corrosion. The gate is powered by a d.c. motor designed to provide controlled descent of the gate arm, an ascent speed which may be regulated to meet special demands, and instant reverse on ascent if necessary. The gate can be controlled automatically or manually, as desired.

Fabreeka Pads for Bridge Bearing Plates

15 The Fabreeka Products Company, Boston, Mass., has announced a new application for its Fabreeka pads in which the pads — similar in design to those used in track to absorb shocks and vibration at points of severe services — are installed beneath the bearing plates of bridges as a load-bearing cushion between the plate and the bridge seat. The material is also being used with equal success under bearing plates of viaduct columns.

These uses are reported as having several advantages, the most important of which is that the material in the pad adjusts itself to any irregularities in either of the bearing surfaces, thus distributing the load uniformly to the bridge seat. Further, it eliminates the need for grouting under the bearing plates and is said to act as a positive seal, preventing moisture from penetrating beneath the plates. It is also claimed that concrete will not flake or crack under the pads. Other considerations are absorption of impact and reduction in noise.

Fabreeka pads are made of multiple layers of a specially designed, hard-woven duck, each 1/64 in. thick, thoroughly impregnated with rubber and cured under heat and pressure. The resulting pad is ½ in. thick and is said to have unusual strength and a limited permanent "set." For use on bridges, the pads are made about ½ in. longer in each direction than the bridge plates.



A Fabreeka pad, 41 in. square, installed at the base of a railroad viaduct column

Safety Hand Tongs

16 The Mack Welding Company, Duluth, Minn., has perfected a tool for manually lifting ties and other timbers, known as the Mack Safety Hand Tongs. The tool consists of a lever which has a hand grip at one end and two sharp points at the other, these points forming one jaw of the tong, and a curved member, attached to the lever by a pin connection, which has at its outer end a sharp point that forms the other jaw of the tongs.

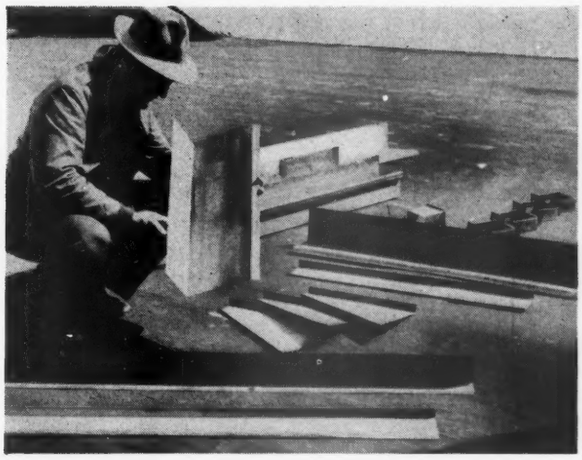
When lifting a timber the points at the outer end of the lever grip the top of the timber and the point at the end of the curved jaw grips the vertical face of the end or side of the timber. The grip is tightened as lifting pressure is applied to the handle. The tool, said to have a lifting capacity of 600 lb., is 15 in. long, weighs 3 lb., and is made of cast aluminum. The points are made of tool steel and are replaceable. A larger size is available for rolling or turning timbers only.

Monel Sheet Roofing

17 An improved type of Monel (nickel-copper alloy) sheet for roofing purposes has been announced by the International Nickel Company, New York. While retaining all the mechanical and corrosion-resistant properties of its predecessor, the new sheet is softer in temper and, therefore, is said to lend itself more readily to the various bending, forming, seaming and soldering operations necessary in application, thus reducing fabrication and installation costs.

The sheet is available in standard roofing thicknesses and is said to be

adapted to practically all types of roof construction. According to the manufacturer the Monel sheet, while easy to form, is tough and hard, has a low coefficient of expansion and high rigidity, is not subject to fatigue cracking, and remains unaffected by sudden temperature changes. It is also being used for such structural purposes as skylight framework, penthouse siding, through-wall flashings, cap and base flashings, gutters, cornices and downspouts, as well as for complete roofs.

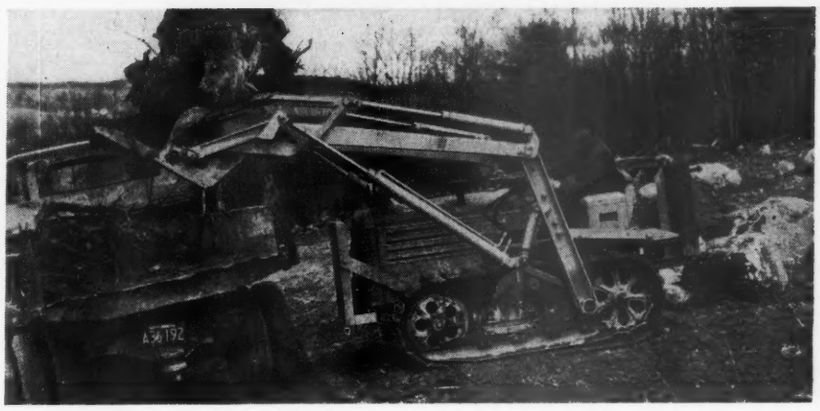


An assortment of fabricated Monel roof parts

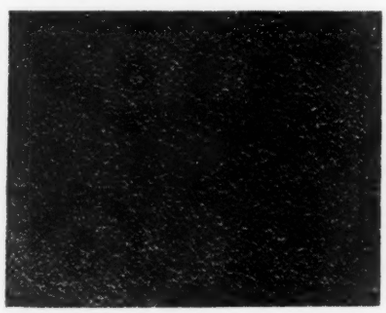
Bucket Controlled by Hydraulic Power

18 The Oliver Corporation, Cleveland, Ohio, has added to its line of loader equipment a hydraulically-operated front-end loader, with a hydraulically-controlled bucket, for use with the company's small crawler tractors—the Oliver Cletrac Model A and the Model HG.

According to the manufacturer, with hydraulic control the working area can always be kept level, a full bucket can always be obtained, the bucket level is maintained automatically when lifting the load, and trouble with springs, latches, chains and trip cables is eliminated. Other features of the hydraulic control include a high "breaking out" power and a high degree of discharge control.



The Oliver Cletrac Model A tractor with hydraulically-operated front-end loader



Surface of one of the test blast plates after cleaning away the soot shows an etched appearance

Blast Plates of Stainless Steel

19 In connection with its search for a blast-plate material with a longer life for use on bridges and underpasses, the Carnegie-Illinois Steel Corporation, Pittsburgh, Pa., has released a report on a seven-year test installation of lightweight U. S. S. 12 Stainless Steel blast plates on an extremely heavily-traveled railroad bridge in the Pittsburgh district. According to the report the average loss of thickness of the stainless steel blast plates, which during the seven years had been exposed to the blast of approximately 130,000 steam locomotives, amounted to 0.006 in. Based on this figure, blast plates of ⅛-in. stainless steel under similar conditions would last over 70 years before they would be reduced one-half in thickness. On this bridge blast plates of ⅜-in. structural steel are said to have lasted only about 10 years.

New Application of Pentachlorophenol

20 The Dow Chemical Company, Midland, Mich., is introducing a new application of pentachlorophenol-in-oil solutions, namely, protecting freshly-adzed tie surface. Such a solution, a recognized wood preservative, has a low viscosity; consequently it can be applied in cold weather, either by spraying machines or by brush, without heating. In warm weather its low viscosity facilitates rapid penetration into the surface on which it is applied.

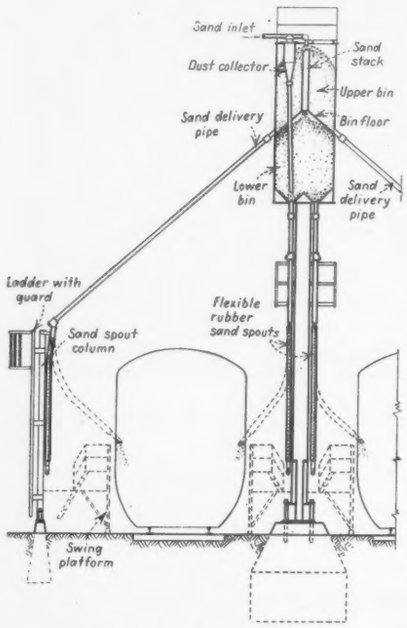
The commonly used solution — five per cent pentachlorophenol in petroleum oil — is said not to be corrosive to the metals used in the construction of spraying machines, and, to date, no

Pentachlorophenol-in-oil can be applied to freshly-adzed tie surfaces by spraying machines, such as the Woolery unit shown

such trouble has been reported. Pentachlorophenol is available in dry crystals, to be blended with petroleum oil as a concentrate and later diluted with oil, or in ready-to-use solutions in drums or tank cars.

Low-Tower Diesel Sander

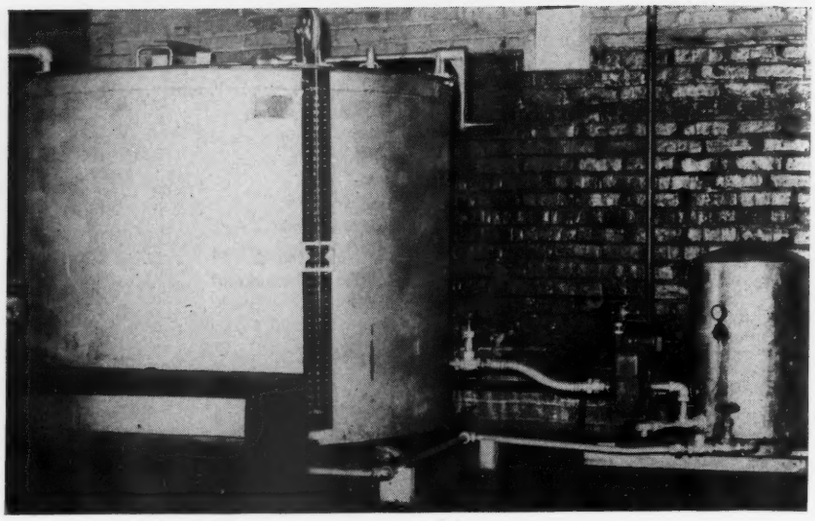
21 The Roberts & Schaefer Co., Chicago, has developed a sanding plant for Diesel locomotives designed with a low height tower (with consequent savings in material) without flattening the angle of the delivery pipes leading to the opposite sides of the sanding tracks. This has been accomplished by designing the storage tank with two compartments, the upper feeding the angled outside delivery pipes and the lower feeding the vertical inside delivery pipes.



Elevation of the new Roberts & Schaefer low-tower sand plant

The outside delivery pipes are tapped into the sides of the tank at the level of the upper compartment, rather than into the bottom of the tank. Consequently, the height of tower can be reduced considerably and still maintain a delivery pipe angle sharp enough for satisfactory delivery of sand by gravity. In an actual installation the tower height is 28 ft. 6 in. For a conventional installation of the same capacity, with delivery pipes at the bottom of the tank, the tower would have to be 35 ft. 6 in. high.

Other features of the sand plant include rotary swing service platforms, a "cyclone" dust collector, and "Roto-Sleeve" sand valves.



The Dearborn detergent mixing and feeding system

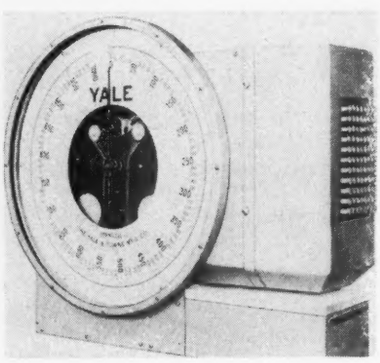
System for Feeding Detergent Solutions

22 The Dearborn Chemical Company, Chicago, has developed a compact, self-contained system for mixing and feeding detergent solutions used in cleaning railroad cars and motive power. This unit consists of an agitator-type chemical mixing tank, and an automatic pressure system which delivers, at an adjustable rate, the cleaner solution to spray nozzles or car washing equipment.

Yale Scale Weight Printer

23 The Yale & Towne Manufacturing Co., Philadelphia, Pa., is now offering as an integral part of Yale Load King industrial scales, a weight printer which prints on a ticket or a tape actual weights in numerals 9/32 in. high. In addition, when the various weights in a series are to be separately identified, the device can print opposite the recorded weight, from one to eight other symbols, either numerals or letters.

The Yale weight printer can be adjusted to take tickets ranging in size from 3 in. by 5 in. to 8½ in. by 11 in., with one to four copies. All copies, including the original, are carbon backed and of regular weights. Other weight printers are available with ticket printers in various combinations with tape printers, or with tape printers only. The standard printer operates on 100-volt, 60-cycle, single-phase, a.c. current. However, it can be furnished for operation on other currents on special order.

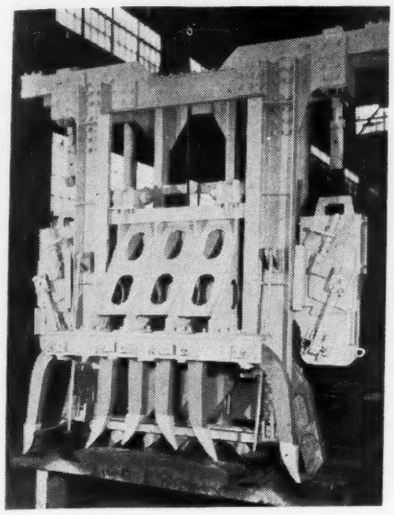


The Yale & Towne weight printer for recording and identifying actual weights

Improved Cribbing Machine

24 A newly-designed power-operated cribbing machine, which incorporates a mechanical "pick and shovel" arrangement for removing fouled ballast from the cribs, has been announced by the Pullman-Standard Car Manufacturing Company, Power Ballaster Division, Chicago. In appearance and operation the unit resembles the Power Ballaster, except that the crosshead member is fitted with two sets of digging tools rather than tamping shoes. These digging tools are lifted and then dropped in a pile-driving action.

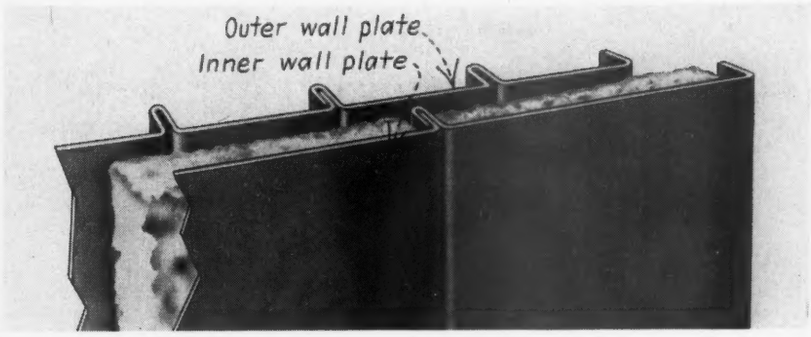
The forward set of digging tools consists of picks designed to loosen the ballast in the crib ahead of the one in which the main digger bars are working. These picks serve a dual purpose in that they also absorb the energy of the falling head when ballast has been removed in the crib behind.



Crosshead of the Pullman-Standard cribbing machine, showing the picks in front and, behind them, the digging bars

The main digger bars are so mounted on the crosshead that, as they penetrate the loosened ballast they also move transversely, breaking the ballast out toward the tie ends. After the digger teeth have reached the tie base, a cam-controlled action takes place which drives the main digger bars in a predetermined path along the tie base at an elevation varying from the level of the tie base at the center of the track to a level 3½ in. below the tie base at the tie ends.

The unit, driven by a 100-hp. gasoline engine, is operated by one man. It is said to clean out about 80 to 90 per cent of the ballast in each crib, the remaining loose material being removed by four men working behind the machine. According to the manufacturer the cribber has cleaned 8,014 cribs at an average rate of one crib every 45 seconds, working under regular service conditions and in heavy ballast. Like the Power Ballaster, the cribbing machine is equipped with an air lift by means of which the unit can be removed from the track.



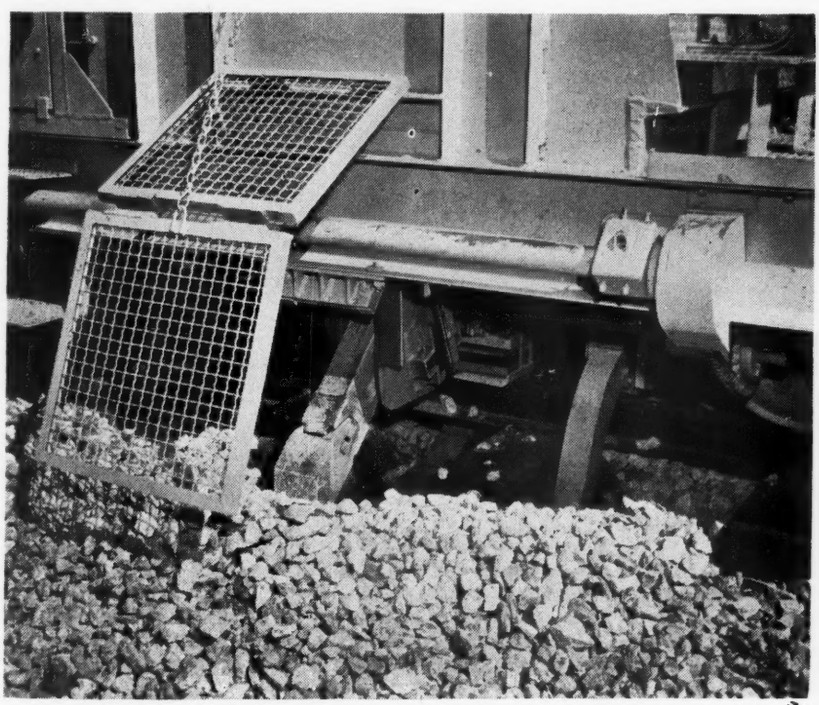
Showing construction of the Mahon field-constructed insulated steel wall

Insulated Walls and Prefab Wall Panels

25 The R. C. Mahon Company, Detroit, Mich., is introducing insulated steel walls and insulated, prefabricated steel wall panels for the construction of buildings requiring insulation against heat loss, cold and noise. The insulated steel walls are field constructed of two standard wall plates which are rolled from 18 and 20-gage galvanized steel, stainless steel or aluminum. The inside wall plates are placed first, with flat side in, and are welded to the sill angle, intermediate girts and the eave strut, each plate interlocking with the preceding plate.

Fiberglass insulation, 2 in. thick, is then laid between the ribs of the inside wall plate, and a ⅜-in. by 1-in. channel is welded laterally across the ribs at 4-ft. intervals between the sill and eave strut. This channel serves as a spacer between the inner and outer wall plates that presents a minimum of through metal contact between the plates. Next, the outside plates are placed with ribs out and offset 1½ in. from the ribs of the inside plate. The outside plates are also interlocked and are welded or clipped to the spacer channels as they are installed. In the final step the interlocking ribs of the outside plates are securely locked together by a button punchlock, thereby providing lateral continuity in the wall surface between supporting members. The wall thus formed is said to have insulating properties equivalent to that of a solid 28-in. masonry wall.

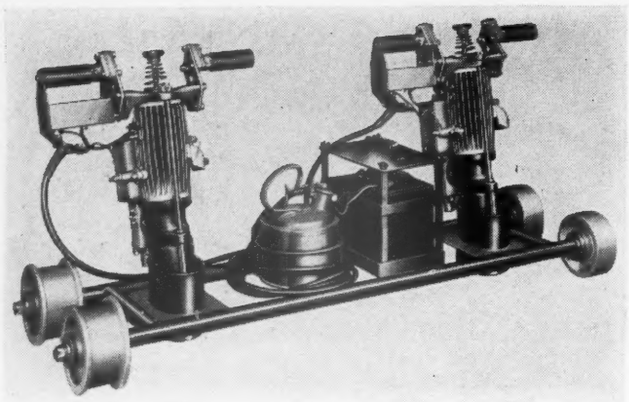
The insulated prefabricated wall panels are constructed of 18- and 20-gage galvanized or stainless steel. Each panel is 1 ft. wide by 3⅜ in. thick, with 2 in. of Fiberglass insulation packed between the outer and inner metal surfaces. In erecting a wall with these units the panels are placed in position and welded to sill angles, intermediate girts and eave struts. Subsequent panels interlock with preceding ones and are also welded in place as erection progresses. Bonds at sills, lintels, etc., are provided by ¼-in. weather seals. Walls thus formed are said to have insulating properties equivalent to that of an 18-in. brick wall.



In this close-up view of the cribbing machine in operation the picks are at the right and the digging bars at the left

Improved Barco Products

26 The Barco Manufacturing Company, Chicago, has announced a number of improvements in its gaso-



The improved Barco spike-driver carriage can now accommodate two spike drivers

line spike driver and in its spike-driver carriage. The spike driver has been equipped with a redesigned gasoline tank which does not obstruct the vision of the operator while he is driving spikes from either side of the driver, and which provides additional vertical clearance to facilitate driving of spikes along high rails.

The spike-driver carriage has been

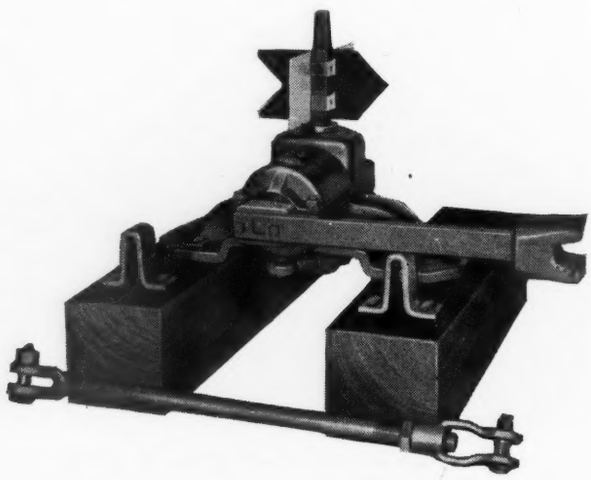
completely redesigned to carry two spike drivers along with the battery and fuel supply. The entire arrangement can be quickly cleared from the track by pulling the cable plugs from the battery, removing the spike drivers, and then lifting off the carriage. This operation can be handled by either one or two men.

Racor Style 22 Safety Switch Stand

27 A heavy-duty, adjustable switch stand, the Racor Style 22, which can be used for either automatic or hand-throw operation, has been developed by the American Brake Shoe Company, Ramapo Ajax Division, Chicago. Designed for use on busy yard ladders and other switching turnouts that are run through frequently, the new switch stand has a linkage or toggle which, it is said, eliminates bearing friction during automatic operation, yet insures completion of throw of partially trailed switches; an adjustable crank eye, 1¾ in. in diameter, to provide ample adjustment to fit the throw of the switch; an oversized spring which is amply strong to hold the switch points against the stock rails; and a standard lever and weight for hand-throw operation.

In automatic operation, when a switch is run through, the action of the wheels on the point revolves the spindle against the pressure of the spring until the mid-point of the switch is passed, after which the spring forces the spindle to complete the revolution, thus leaving the switch in the reverse position. If the train reverses direction before the mid-point is reached, the spring forces the switch back to its original position. During the automatic operation the hand-throw lever remains fixed.

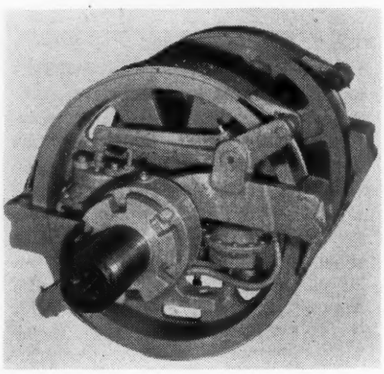
During hand-throw operation the spring is not engaged except for slight compression at each end of throw to supply the pressure necessary to maintain the position of the switch against the stock rail. The switch target and lamp tip move with the switch whether thrown by hand or automatically.



The Racor Style 22 automatic switch stand

"American" Double Tandem Clutch

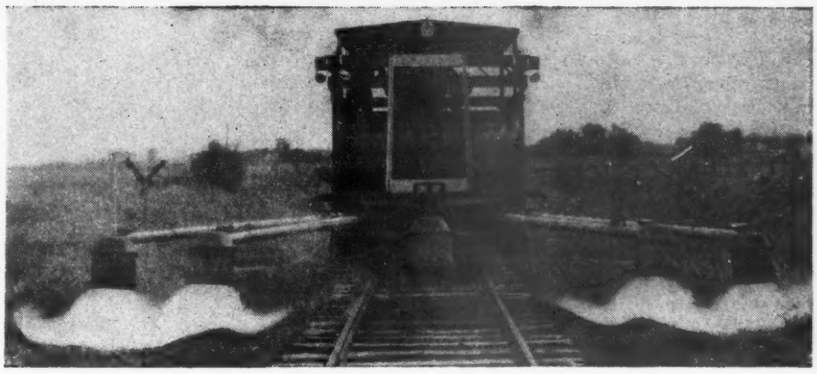
28 The American Hoist & Derrick Co., St. Paul, Minn., after several years of research and experiments, has developed a new standard clutch for swinging and traveling on



"American" locomotive cranes. The new clutch retains the desirable features of the outside-band-type clutch (simplicity, efficiency and ease of replacing lining) while, it is said, overcoming its prinpciple objection, that of keeping the band perfectly round so that its full surface contacts the drum.

This has been done by using a double tandem clutch which consists

of two half bands, rather than one full band encircling the entire drum. Each half band is actuated by a separate air cylinder, both air cylinders being controlled by a single valve. With these half bands it is said to be a simple matter to keep the entire band surface in contact with the drum, thus avoiding high spots and jerky operation.



Improvements to Fairmont Weed Burner

29 A number of improvements in the design of the W55 Series A weed burner has been announced by Fairmont Railway Motors, Inc., Fairmont, Minn. These improvements include: (1) A new gear-type fuel-oil pressure pump with two long bearings for both the drive shaft and the idler shaft, which is said to have a longer life; (2) a new strainer for the fuel pressure pump intake line, which is reported to have better operating characteristics; (3) a sturdier rubber mounting for the blower engine unit; (4) synthetic rubber construction of three of the main fuel lines, making them easier to handle and install; and (5) a more readily accessible grease fitting for the clutch throw-out bearing on the propelling engine.

RMC Plastic Packing

30 The Railway Maintenance Corporation, Pittsburgh, Pa., is introducing a new RMC Rail Joint Packing which incorporates a number of features. It is made in block form of vermiculite, heavy asphalt oil and inhibitors. Vermiculite, which is non-hygroscopic and inert chemically in the presence of water, is said to have antifriction qualities comparable to graphite, an important feature in reducing wear between the bearing surfaces of the splice bar and the rail. The blocks of packing are wrapped in a new type of paper which disappear rapidly after the initial installation of the packing.

When installing the material the blocks are placed on the joint bar and tamped firmly into place. After the joint bars are applied and the bolts tightened, the excess material at the ends of the bar is rammed behind the bar and shaped off at the ends to provide addi-

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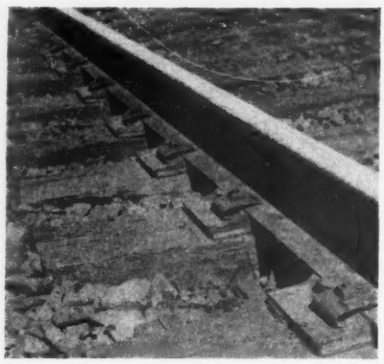
tional protection at the base of the rail.

RMC packing is also made in a mixture of lighter consistency, which can be used for the protection of switch plates, rail, and exposed surfaces on the top of bridge decks, and of girders or web plates where ashes or other corrosive materials may be retained. This packing may be troweled or brushed onto the surface. When exposed to the atmosphere it forms a heavy, leathery surface which prevents the penetration of excessive moisture. Also, the material itself is very dense and is said to provide an excellent coating for protecting bolts, nuts and lock washers.

Bird Tie Pad

31 Bird & Son, Inc., East Walpole, Mass., has made improvements in the pad it manufactures for application between tie plates and ties, which is designed to extend tie life and reduce the cost of maintaining track line and surface. The tie pad extends tie life, it is said, because, forming a tight seal between tie and pad, it eliminates motion against the wood and excludes dust and other abrasives from between the plate and the tie; and being water resistant, it keeps the wood under the plate and around the spikes comparatively dry.

According to the manufacturer the tie pad has a resiliency sufficient to cushion some of the shock to the ties and thereby helps to prevent tie displacement and disintegration of the ballast. It is said that the pad preserves



An installation of Bird tie pads under 8-in. by 11-in. tie plates on the low side of a two-degree curve

the wood under tie plates to such an extent that its original strength is maintained. This factor, it is claimed, combined with the virtual elimination of mechanical wear, permits the use of smaller tie plates without damage to the ties.

The Bird tie pad is made of alternate layers of heavy cotton duck and a specially woven burlap, impregnated with mildewproofing and waterproofing saturates and laminated together with thin films of modified asphalt. The pad is then stapled from both sides with solid bronze staples to avoid possibility of ply slippage, and the entire pad is coated with a highly modified bituminous coating. The pad is made in a ¼-in., 5-ply thickness, and a ⅜-in., 7-ply thickness, in all tie plate sizes.

Hartop Electrodes

32 The Harnischfeger Corporation, Milwaukee, Wis., is offering a new line of four hardfacing welding electrodes. One, called "Hartop Red," forms a tough deposit designed to resist severe impact and extreme abrasion. Another, "Hartop Yellow," produces a deposit which resists abrasion and deformation caused by weight and impact. The third, "Hartop Green," is a general all-purpose hardfacing electrode. The fourth electrode, "Hartop Brown," is designed for application to parts subject to abrasion and angular shock. It is said that, using these electrodes, good results are obtained without employing any special technique in their application.

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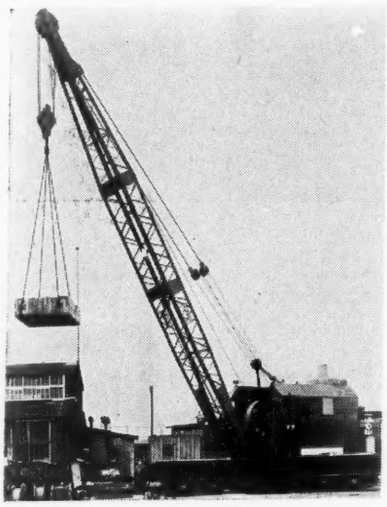
Orton Builds 60-Ton Locomotive Crane

33 A locomotive crane having a capacity of 60 tons, which incorporates a number of special features,



was recently built by the Orton Crane & Shovel Co., Chicago, for the Chicago, Burlington & Quincy. To be known as the Orton Model 60 crane, the unit is said to be as large as any crane ever built. It is intended as a combination bridge derrick and pile driver, and will be used by the Burlington in all classes of bridge work over the entire system.

The crane is steam operated and has an over-size boiler for operating a pile hammer. It is mounted on twelve wheels to reduce the axle loading, and has anti-friction bearings throughout, air-control of all movements and air brakes.

Hardfacing Alloys

34 The Air Reduction Sales Company, 60 E. Forty-Second street, New York 17, has announced a new line of hardfacing welding rods, consisting of 15 different alloys. These alloys are divided into three primary groups, — viz., ferrous alloys, cobalt-base alloys and tungsten carbide. In introducing the new Airco line, the manufacturer is offering a trial assortment containing a quantity sufficient to assure an adequate performance test.

The alloys included in the trial assortment are: (1) The new Aircolite hardfacing alloy, recommended for equipment subjected to severe abrasion and medium impact (for both oxyacetylene and electric-arc application); (2) the Airco self-hardening alloy, for equipment subjected to severe impact and abrasion (for electric-arc application).

Also included in the trial package are instruction sheets for the two alloys and a descriptive booklet covering the entire hardfacing line.

Treating Ties with Pentachlorophenol

35 The Dow Chemical Company, Midland, Mich., has been conducting experiments on the treatment of crossties with pentachlorophenol by the hot and coldbath method. The data obtained as a result of the experiments indicate that adequate absorption of the preservative can be obtained economically and simply by this method of treatment.

In these experiments untreated framed and bored ties, which had been seasoned for approximately one year, were used. Most of the ties were of oak, but runs were also made of Southern yellow pine, black gum, hard maple, beech, sweet gum, rock elm, red elm, ash and hickory. The preservative was five per cent by weight of pentachlorophenol in oil.

The general procedure followed in the experimental work was to treat two ties per run. These ties were first weighed, then placed in the tank and covered with the preservative oil solution. Next, the oil was heated until the wood reached the desired temperature, after which the hot oil was pumped off and the tank immediately filled to the top with cold preservative oil. In most cases the procedure was then to soak the ties overnight in the cold oil, pump off the oil, remove and weigh the ties, and calculate absorptions in pounds per cubic foot.

In all, five experiments were conducted. The first was made to determine how hot the ties should be to obtain adequate absorption. Using red oak ties, runs were made with tie temperatures of 59 deg. C., 68 deg. C., and 80 deg. C. The average absorptions, in pounds per cubic foot, obtained at these temperatures are as follows: 59 deg. C., 4.8; 68 deg. C., 6.2; and 80 deg. C., 6.7. These values are somewhat low because no correction was made for moisture lost during the immersion in hot oil.

In the first experiment the ties were left in the cold bath 12 to 16 hours. In the second experiment red oak ties were again heated to 80 deg. C. at a point 3 in. from the surface, but were weighed after two hours in the cold bath and then put back in the bath and reweighed 88 hours later. In this run the absorptions after two hours amounted to 5.1 and 5.8 lb. per cu. ft. for the two ties respectively, and 9.3 and 11.2 after a total of 90 hours.

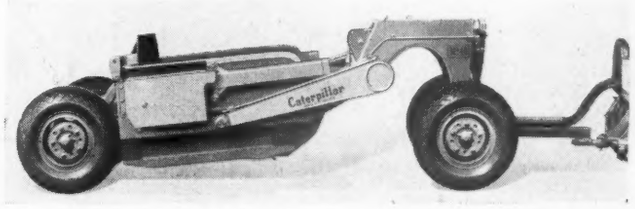
The third experiment was carried out to determined the length of time required to heat the tie to 80 deg. C. at three inches and at one inch from the surface, and also to determine approximately how much time is required in the cold bath, before the temperature of the tie falls to atmospheric temperature.

The other experiments indicated that Southern pine, black gum, hard maple, white elm and red elm are easier to treat than red oak, while white oak and hickory are somewhat more difficult. The results of the treatment on sweet gum, rock elm, beech and ash were somewhat inconclusive. Good distribution was noted in red oak, gum and yellow pine ties, but the preservative failed to penetrate white oak, the only other specie checked in this respect.

Hydraulic Scraper by Caterpillar

36 A hydraulically-controlled scraper, the Caterpillar No. 40, which features forced ejection and a flat bottom, has been developed by the Caterpillar Tractor Company, Peoria, Ill. The unit, matched to the power of the D4 track-type tractor, has a struck capacity of 3.6 cu. yd. and a heaped capacity of 4.5 cu. yd. It is 21 ft. ½ in. long overall, 7 ft. 5½ in. wide and is said to be easy to maneuver and operate.

The unit is furnished with hydraulic jacks and hoses leading to the forward end of the scraper pole, and requires a pump having a minimum capacity of 35 gal. per min. at 1,400 r.p.m. and capable of supplying a continuous pressure of 1,000 lb. per sq. in. If desired the manufacturer is offering for use with the scraper a front-mounted hydraulic power-unit arrangement consisting of a 37-gal. per. min. pump, double valve, hydraulic lines, mounting and drive parts, and a tank with additional oil capacity.

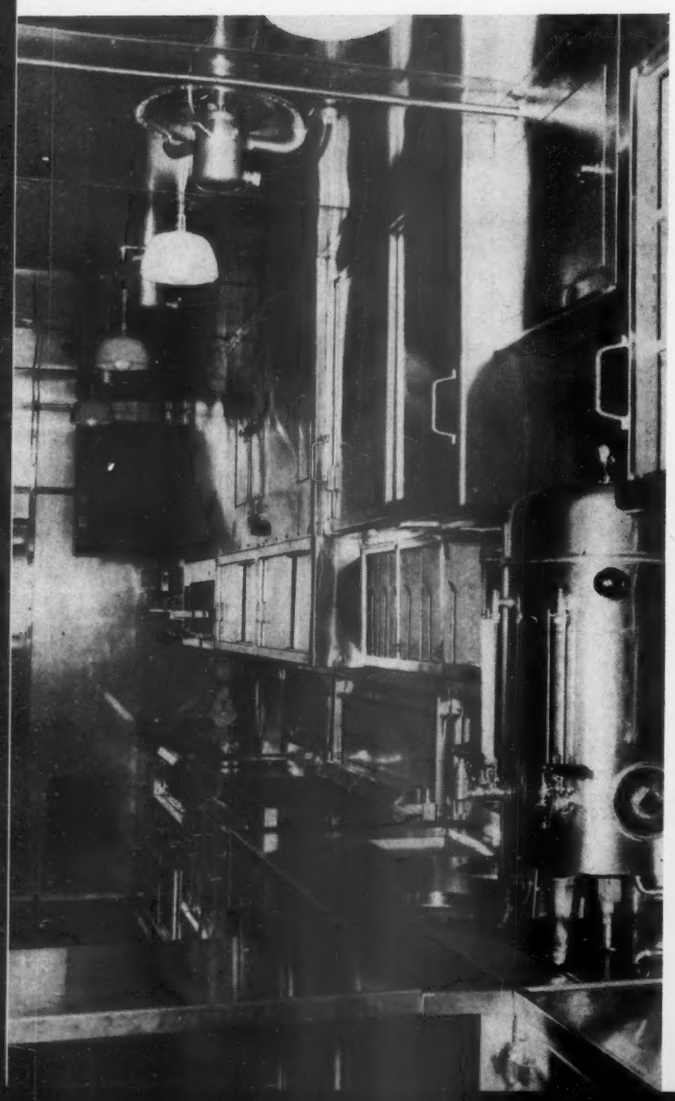


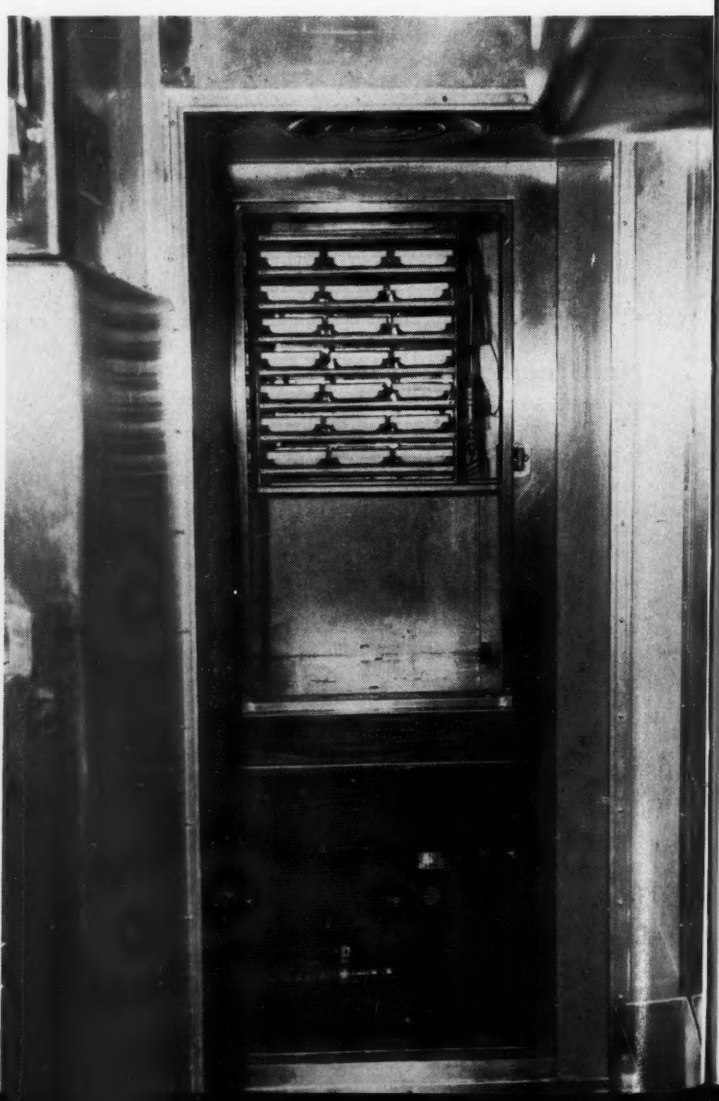
The Caterpillar hydraulically controlled scraper

ILLINOIS CENTRAL ALL-ELECTRIC DINER

85-ft. car, built of Cor-Ten steel at Burnside shops, is equipped with dual Buda 39-hp. Diesel power plants and G.E. electrical equipment rated to develop 50 kw.

Left — Compact and completely electrified stainless-steel kitchen. Right — The ice-cube making machine





The dining room

The Illinois Central has recently completed construction at its Burnside (Chicago) shops of an all-electric dining car. The car, 85 ft. long, is built of welded Cor-Ten steel and weighs 157,560 lb., a saving of over 10,000 lb. in weight as compared with earlier riveted carbon-steel cars.

The idea of an all-electric diner is not new to the Illinois Central, plans and designs for such a car having been worked out by the mechanical and dining service departments of the railroad, in cooperation with the General Electric Company, as long as three years ago. Priorities on metals and some electrical equipment, together with the road's ambitious car-building program, delayed completion of the car until last month.

The new dining car includes an adaptation of the electric galley developed by the U.S. Navy for cooking on submarines. Its use is expected to solve many troublesome problems experienced when cooking in confined areas and presents numerous advantages, notably freedom from excessive cooking heat, smoke and soot, with attendant increased cleanliness and improved working conditions for the car crew.

Stainless-Steel Kitchen

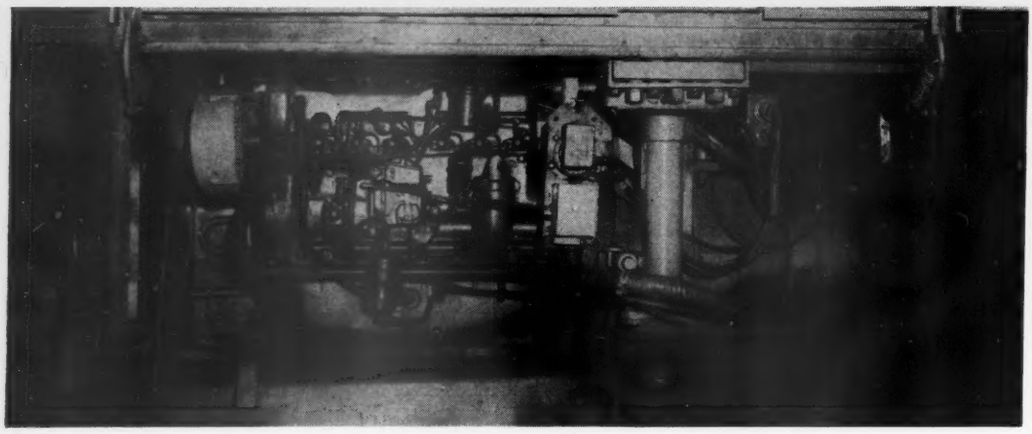
The substantial amount of electric power required, up to 50 kw., is supplied by two Diesel-driven generators housed beneath the car and drawing fuel from a 100-gal. tank which permits operation of the dual power plants for 24 hr. without refueling.

The stainless kitchen of the new diner utilizes the latest advancements in electrical kitchen appliances and affords the completeness of a large hotel kitchen in a space 17 ft. long by 7 ft. wide, with 54 sq. ft. of standing area. The entire kitchen arrangement gives a definite impression of compactness and efficiency.

Newly designed commercial electric equipment, much of it previously unknown to railway food handling, has been built into compact galleys with the aim of bringing greater efficiency and convenience to dining-car operation. This equipment includes heavy-duty electric ranges, automatic electric broilers, bake ovens, deep-fry kettles, a garbage disposal unit, electric dishwasher, grills, griddles and coffee-makers, as well as an ice-making machine and other freezing equipment, including near-zero freezing storage units and electric refrigerators.

The car employs specially designed lighting and electric temperature control facilities. In the interest of efficiency, hot water used on the car is heated by the exhaust from the two Diesel engines under the car. This exhaust-heating system supplements heat available from the usual train steam-line. In addition, there is a 10-gal. electric hot-water heater to assist in boosting water temperatures. The kitchen and pantry sinks are equipped with an automatic steam-heating device thermostatically controlled to maintain water temperatures in accordance with U. S. Public Health Service regulations.

Under normal conditions, the new diner will be able to serve an average of nearly a meal a minute. The automatic electric deep-fry kettle, for example, occupies less than 2 sq. ft. and is capable of producing



One of the General Electric-Buda 39-hp, Diesel-driven power plants

about 100 lb. of French-fried potatoes, fried chicken or fish hourly. The Hotpoint electric coffee urn has a capacity of 3 gal. and is similar to those used in restaurants.

Eight different units of refrigeration equipment furnish varying degrees of cold for food storage. The principal refrigerator has a capacity of 300 lb. and is used for storage of meats. A counter and fish refrigerator is used for storing fish, sauces and gravies and has a capacity of 75 lb. Temperatures in these units are maintained at 35 deg. F. The frozen-food refrigerator, used for storing out-of-season fruits and vegetables, maintains temperatures between zero and 5 deg. F. and has a capacity of 75 lb. The ice-cube storage refrigerator is operated at about 20 deg. F. and will hold 1,500 ice cubes. Salads, cocktails, milk, cream and butter are kept in the counter and cold-pan refrigerator, which has a temperature around 38 deg. F. A 17-cu. ft. fruit-storage refrigerator keeps oranges, lemons, grapefruit, fresh vegetables, etc., at a temperature of 38 deg. F. Beverages are stored in a special refrigerator and likewise are kept at a 38-deg. F. temperature. The ice-maker is capable of making 21 trays, or 588 ice cubes, every 96 min.

The range top has a cooking surface of 6½ sq. ft. Other cooking facilities include the steam table, charcoal-type broiler, back-shelf broiler, plate warmer, cup warmer, bouillon-cup warmer and bread-warming oven. Cabinet designs and assemblies were completed by the Illinois Range Company. Heating units were manufactured by the Hotpoint Manufacturing Company, a General Electric subsidiary.

An electric mixer, product of the Hobart Manufacturing Company, turns out fluffy mashed potatoes. This mixer also operates several attachments, including a power meat grinder. A glass washer, designed by the Hamilton-Beach Company, is built into the cabinet sink assembly. The electric dishwasher, manufactured by the Hobart Company, automatically soaps, washes, rinses and steams in a single operation.

The garbage disposal unit was designed by the General Electric Company especially for heavy-duty railroad service. Refuse is ground, liquefied and passed off through a drain.

The new diner has modern Frigidaire air-conditioning equipment. In addition to the regular air-conditioning equipment, the kitchen has five Ilgair electric exhaust fans installed in the ceiling to draw out cooking odors.

Functions Performed by the Electric Control Equipment

1. Provides for starting and stopping the Diesel engines independently.
2. Provides for starting and stopping the motor-generator set for either normal or inverted operation, with automatic phasing in and synchronization with the engine-generator set selected.
3. Provides for disconnecting the air-conditioning and cooking load in case of failure of an engine-generator set, automatically maintaining the essential load or, if necessary, transferring it to the other set.
4. Provides for inverting the motor-generator-set operation to supply power for the essential load from the battery, in case of failure of both engine-alternator sets. A reverse power relay prevents the motor-generator set from supplying power to any load other than the essential load under this condition.
5. Provides plug-in facilities for standby power, preventing the paralleling of standby power with power from an engine-generator set.
6. Provides overload protection for the control circuits, alternators and motor-generator set with automatic reset in case of temporary overloads for each of the alternators and hand reset in case of a sustained heavy overload.
7. Provides for measuring battery voltage and the a. c. voltage of each of the alternators and of the motor-generator set.
8. Provides for the voltage regulation of the d. c. output of the motor-generator set. The main control panel is arranged for mounting inside the car, while the two cabinets are designed for under-car mounting.

Electric Power Supply

Electric power generating and conversion apparatus on the car consists of two model 6BD-230 Buda Diesel power-plant assemblies for furnishing 220-volt, 3-phase, 60-cycle power; a motor-generator set with a 220-volt, 3-phase, 60-cycle motor and d. c. generator for battery charging; and all the necessary equipment for controlling and regulating the operation of all apparatus.

Each of the power plant assemblies consists of a housing arranged for under-car mounting and containing a Diesel engine directly connected to an alternator, complete with exciter and voltage regulating control. The set is mounted in the housing in such a manner that it can be pivoted to the outside beyond the edge of the car for servicing without making any disconnection other than that of the exhaust pipe. Provision is also made for removal of the engine-alternator set while in the swung-out position, and mechanical interlocking insures a secure position of

the set in operating position before covers can be closed and fastened. When in normal operating position, the set is carried on vibration dampeners mounted inside the housing.

A propeller-type fan, mounted on the engine, furnishes ventilating air for the alternator, and a separate radiator unit, complete with motor-driven fan, is provided for each power plant; the operation of the fan motor is thermostatically controlled by the temperature of the engine jacket water.

The heat exchanger, which heats water for kitchen use, utilizes exhaust gases from each engine. These gases pass through a flexible connection to a muffler and thence to a transfer valve which directs them either to the exchanger or to the atmosphere, under control of a thermostat in the hot-water tank.

The motor-generator set is normally driven either from the 220-volt alternator of the engine-alternator set or from 220-volt a. c. wayside power. It furnishes d. c. power for battery charging and for control, with the d. c. output regulated by a voltage-control relay. It may also be used for inverted operation, taking power from the battery and furnishing power for lighting, ventilating fan and coffee urn. While the set is operating inverted, the battery-charging regulator is disconnected, and special resistors with a negative temperature coefficient are connected into the d. c. motor-field circuit. Thus a fairly constant speed is assured and an essentially constant a. c. voltage output obtained.

The total electrical load of the dining car has been divided into (a) the essential load, consisting of lighting, battery-charging, refrigeration and coffee-urn requirements, and (b) the air-conditioning and cooking load, with the essential load normally supplied by alternator No. 1 and the remainder from alternator No. 2.

The control equipment, consisting of contactors, current transformers and fuses mounted in two control cabinets and of instruments, relays and switches mounted on a main control panel, is arranged to divide the total load into two classifications for normal operation and to perform other functions as listed in one of the tables.

If the No. 2 engine cannot be operated, all loads listed under engine No. 1 are available; the loads listed under engine No. 2 are not available. If No. 1 engine cannot be operated, the No. 2 engine will take all loads listed under engine No. 1 except the electrically operated charcoal-type broiler and the loads listed under engine No. 2 will not be available.

Should it be impossible to operate either engine, the following loads are available from the battery (the length of time this operation can continue will depend on the charge in the battery and will probably be about three hours): Coffee urn, food-storage refrigerator, counter and fish refrigerator, frozen-food refrigerator, ice-cube storage refrigerator, counter and cold-pan refrigerator, ice-cream refrigerator, fruit refrigerator, hall and vestibule lights, one-half of dining room lights.

The following loads are operated directly from the battery at all times: Brake speed-control governor, electric locker and overhead unit lights, Vapor panel-fan and air-conditioning control, kitchen ceiling lights, a. c. power control, emergency lights—hall, vestibule and dining room (under automatic relay control from a. c. power).

Power obtained from standby lines handles loads in the same divided manner as for division of loads between the No. 1 and No. 2 engines.

Power Plant Apparatus Ratings

Buda Diesel engine type 26-BDG-230—
39 hp. at 1,800 r.p.m.
A.c. generator with exciter and voltage regulator—
25 kva., 1,800-r.p.m., 0.9p.f., 220-volts, 3-phase, 60-cycles
A.c. induction motor with fan and radiator—
3-hp., 3-phase, 60-cycles, 220-volts
Motor-generator set, type GMG-147-A1—
220-volt, 3-phase, 60-cycle, motor;
64-volt, 1,800-r.p.m., 10-kw. generator
Control panel, type 17FM70A1
Control groups, type 17KG105A1 and 17KG105B1

Division of Electric Load under Normal Operation, with Both Engines Running

ENGINE NO. 1 SUPPLIES:

*GMG set (battery charging)
Coffee urn
Food-storage refrigerator
Counter and fish refrigerator
Frozen-food refrigerator
Ice-cube storage
Counter and cold-pan refrigerator
Ice-cream refrigerator
Ice-making refrigerator
Fruit refrigerator
Beverage refrigerator
Range top and oven (right half)
Hot food table
Hall and vestibule lights
Dining room lights
Kitchen exhaust fans
Work lights
Refrigerator lights and fans
110-a.c. receptacle
Fruit juicer
Food mixer
Picture and panel lights
Glass washer
Garbage-disposal unit
*Charcoal-type broiler

ENGINE NO. 2 SUPPLIES:

Range top and oven (left half)
Deep-fry kettle
Back-shelf broiler
Plate warmer
Cup warmer
Bouillon-cup warmer
Dish washer
*Air-conditioning
Hot-water heater

*These loads will automatically be disconnected if respective engine is overloaded.

Features of the Dining Room

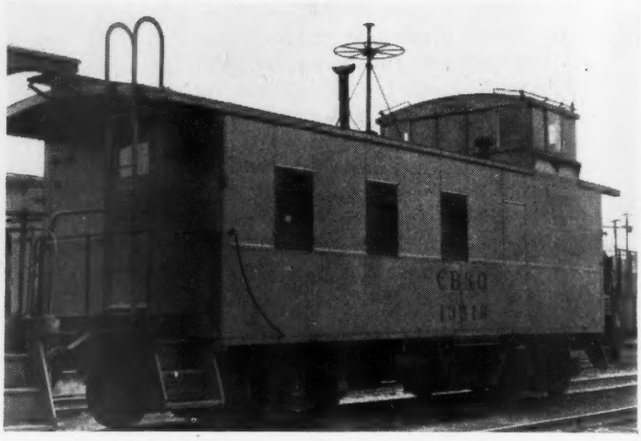
The dining section of the new diner has a capacity of 36 seats. This section is paneled in ribbon mahogany veneer. Ceilings are painted a light gray. Between the windows are peach-colored panel mirrors. The window capping and table tops are Formica pearlescent plastic. Draperies are a dusty rose color. Plain red needlepoint material is used in seat covering. The floor is covered with blue-green carpeting in a magnolia pattern.

The diner is equipped with electro-pneumatic brakes to provide for quick and uniform application and release. The speed governor controls the flow of air to the brake cylinder in proportion to the speed of the train, thus permitting smoother and shorter stops without discomfort to passengers or damage to equipment. It is possible with this equipment to exert a braking force equivalent to 2½ times the weight of the car.

High-speed six-wheel trucks, equipped with Timken roller bearings, also contribute to the comfort and safety of passengers. All wheels on these trucks have cylindrical treads and are accurately balanced on a Bear dynamic balancing machine to assure maximum smoothness of operation.

END-TO-END COMMUNICATION PAYS OFF ON THE "Q"

Engineer in cab of Diesel-electric locomotive using handset to talk by radio to the conductor in the caboose at the rear of the train. Radio control unit is in front of whistle cord at the left



One of the radio-equipped cabooses. The antenna, resembling a cartwheel, is shown atop the car roof in the center of the picture

The Chicago, Burlington & Quincy has equipped 31 Diesel-electric locomotives and 8 cabooses with two-way space radio for communication between the head and rear ends of through freight trains on two adjacent subdivisions between McCook, Neb., and Denver, Colo.—255 mi. In addition, each caboose is provided with a portable walkie-talkie radio unit, which is used by trainmen to communicate with the men in the locomotive or caboose while inspecting the train or when flagging. Each caboose is also equipped with special radio apparatus known as "Slow-Tone" which, when turned on by a trainman, sends out a distinctive intermittent tone, indicating the presence of that train to other radio-equipped trains in the vicinity.

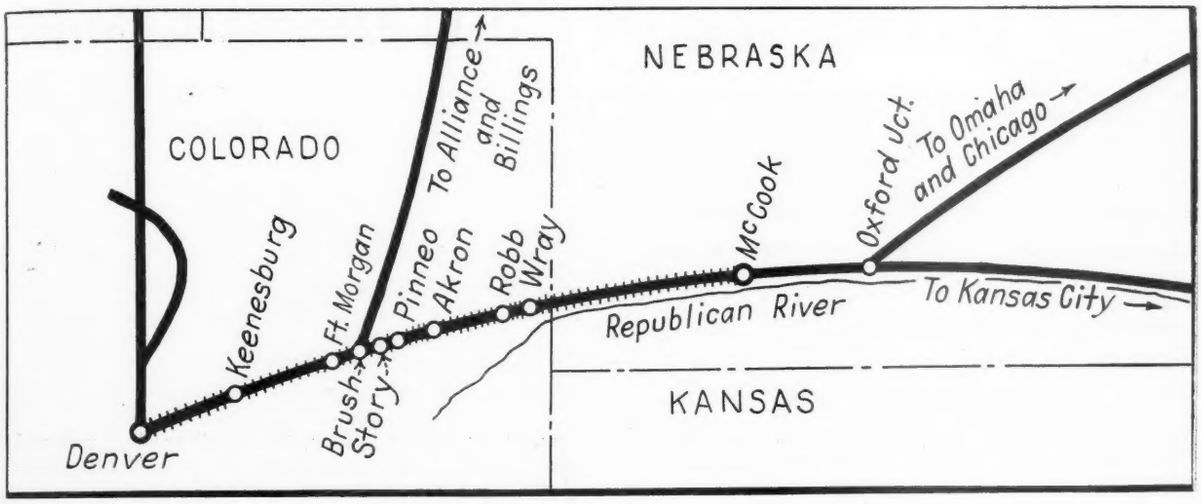
This installation has now been in service for several months, during which many benefits to train operation have been revealed, and plans are under way to install fixed wayside radio transmitting and receiving stations at Akron and Brush, Colo., in the middle of the territory. The transmitters at these stations will be controlled remotely from McCook by the dispatcher, and will enable him to converse with crews on trains within 20 mi. each way from the stations.

Trains Up to 6,000 Tons

The 31 radio-equipped locomotives are pooled in operations on through freight trains between Chicago and Denver, and between Kansas City and Denver, the two subdivisions between Denver and McCook being common to these two routes. The use of the 8 radio-equipped cabooses is confined to the Denver-McCook territory. About 20 trains are operated daily in this territory, including 8 passenger and 6 regular freights, and as many extras as are required to handle the traffic. The maximum tonnage handled in either direction runs between 5,500 and 6,000 tons, with a maximum of 125 cars.

Between McCook and Denver passing sidings are an average of approximately seven miles apart, the entire territory being equipped with centralized traffic control. Leaving McCook, the railroad parallels the Republican river, eventually crossing it and extending across the Prospect and South Platte valleys into Brush, Colo., 167 mi. west of McCook. Between Brush and Fort Morgan, 9 mi., the line crosses comparatively flat plateau country before running into the foothills of the Rocky Mountains for the climb into Denver, which is at an altitude of 5,183 ft.

Westward, the maximum ascending grade is 0.6 per cent. There is a heavy pull out of Wray, 90 mi. west of McCook, towards Robb, as well as on the 7-mi. Keenesburg hill, 75 mi. west of Akron. In both instances the grades are 0.6 per cent. The maximum ascending grade eastward is 0.7 per cent—between Brush and Story, 6 mi., and between Pinneo and Akron, 13 mi. There are several curves in the territory, and the area through which the railroad runs is subject to some severe rain, snow and sleet storms, all of which contribute to operating problems. The territory, therefore, is particularly suited to end-to-end radio communication as an aid in getting freight trains over the road and, as a result of its installation, the movement of freight has been expedited. The radio is liked by the train crews, and saves them considerable walking. One fireman, expressing his amazement at the modern developments in radio communication, said that train and engine crews would feel practically lost without it.



End-to-end radio communication is in service on the Burlington between McCook, Neb., and Denver, Colo.

Day-to-day analysis by Burlington operating officers indicates that the radio avoids an average of 30 min. delay for each through freight train on the 255-mi. run under normal operating conditions. For example, when a westbound train pulls into McCook, a new crew comes aboard and the train is inspected. Several minutes are saved here by use of the radio in inspecting the train, checking the air, and the conductor advising the engineman that everything is in order at the rear and prior to departure. A similar procedure at Akron formerly required about 20 min. With the radio this time has been reduced to 5 min. When the train is leaving the yards at McCook and Akron, as well as passing sidings between McCook and Denver, the conductor tells the engineman when the rear of the train is on the main. The engineman then accelerates to maximum authorized speed at once, rather than dragging along until he is sure, often saving several minutes.

The conductor is able to warn the engineer immediately when hot boxes or other conditions necessitate stopping the train, instead of having to depend on hand signals. Trains are inspected frequently by all persons concerned with their movement—including wayside employees and crews on passing trains—and in this the radio plays a big part. For example, when a freight train passes an open wayside office, the stationman highballs the conductor on the caboose if everything is in order. Similarly, crews of trains on passing tracks highball the conductor on trains passing on the main line if everything is all right. The conductor then uses the radio to give the engineman this information. When trains are rounding curves they are looked over by the crew on the head and rear ends, after which, if everything is in order, they report and confirm "all black"—no hot boxes.

When flagging is required, the radio has proved a help in letting the engineman know exactly when the rear-end man is aboard his train and ready for it to proceed.

The engineman keeps the conductor informed as to where they are—whether approaching a siding for a meet, a station or some other point of importance. If it becomes necessary to make a stop, the engineman notifies the conductor of the situation and what to be prepared for. This saves the conductor from walking to the head end to find out what is wrong, perhaps further delaying the train. When a freight is pulling into a siding, the conductor tells the engineman when the rear of the train is in the clear—which is also a big help to the engineer.

Equipment and Costs

To equip each double-end Diesel-electric locomotive with radio and power-supply equipment cost $1,000. To equip each caboose with radio, power and electrical lighting equipment cost $2,500. At present-day costs, however, these figures would probably be about 25 per cent higher.

The equipment on each locomotive consists of one Bendix 152-162-mc. transmitter-receiver, which is placed in the leading nose of the locomotive before it leaves the terminal. Both cabs, however, are equipped with a loud-speaker, microphone, control unit and antenna. Each caboose is equipped with a transmitter-receiver like that on the locomotives, a loud-speaker, a microphone at the conductor's desk, a telephone-type handset with push-to-talk switch in the cupola, control unit, "Slow Tone" unit, antenna and power supply. The walkie-talkie radio units assigned to the territory weigh 13 lb. and have a maximum transmitter output of one watt. Further details about the equipment and power supplies appear in an article in the February issue of *Railway Signaling and Communications.*

This installation was placed in service under the direction of H. C. Murphy, vice-president operation, and H. H. Hasselbacher, superintendent telegraph, and under the immediate supervision of T. W. Wigton, supervisor of electronics. The major items of radio equipment were furnished by the Bendix Radio Division of the Bendix Aviation Corporation.

RAILROADS CONCLUDE FREIGHT-RATE PRESENTATION

President Williams of North Western and other executives tell I.C.C. of savings from improved facilities and need for funds to continue modernization programs

The railroads' presentation in support of their Ex Parte 168 petition for a permanent freight-rate increase of 13 per cent was concluded at this week's sessions of the Washington, D. C., hearings before Division 2 of the Interstate Commerce Commission and a cooperating committee of state commissioners. The proposed increase would supplant the interim advance of 5.2 per cent which was approved by the commission in its report of December 29, 1948 (see *Railway Age* of January 8, page 242).

Witnesses making the presentations which closed the railroad case were R. L. Williams, president of the Chicago & North Western; V. S. Andrus, assistant to the president, Southern Pacific; L. B. Pritchett, assistant to president, Chicago, Rock Island & Pacific; and Glenn F. Vivian, manager, Statistical Bureau, Western Lines. Jacob Aronson, vice-president and general counsel of the New York Central, is serving as chief counsel for the railroads.

Other presentations, made subsequent to those reported in *Railway Age* of March 5, page 56, included those of the National Association of Railroad and Utilities Commissioners, the Department of Agriculture, and various shipper interests. Many of the latter were heard at two "side-show" hearings conducted by Examiner J. P. McGrath and Examiner Burton Fuller.

President Williams of the North Western stressed the need for earnings which will attract capital to the railroads if they are to modernize their facilities. Meanwhile, he called attention to what has already been accomplished by the industry generally and the North Western in particular in the way of making capital investments to increase the efficiency and economy of operations.

"There is," he added, "much more to be done, however. I cannot recall a time when new and improved tools and methods were being developed as intensively as at present. The prospects for further improvement are very bright if a sufficient increase in rates to produce sufficient income to supply the necessary capital funds is permitted. It is not possible to emphasize too strongly the fact that the rate of progress toward greater efficiency and economy in operation is influenced and in many instances absolutely controlled by the availability of capital money.

"Expenditures of capital money, whether it is used for the purchase of modern machines and tools, modern freight cars replacing the older cars, modern locomotives, or improved maintenance practices for roadway and track, show handsome returns on the investment. The more important money-saving projects require substantial amounts of such money, and unfortunately we have not had nearly enough of it to carry out all of the meritorious projects along this line which would otherwise be available to us."

Earlier in his statement, Mr. Williams had referred to the record levels reached in 1948 by indices of railroad performance, but he warned that a more serious decline in traffic volume than has thus far been experienced "would undoubtedly depress these efficiency indicators." He also called for "realistic depreciation accounting and tax regulations," which would recognize high replacement costs; and he added that, "in any event," a rate structure sufficient to cover such costs "is sorely needed to meet the situation."

C. & N.W. Invests and Saves

Mr. Williams' list of improved facilities installed by the North Western in recent years included an engine lathe costing $23,300 which resulted in an annual saving of $5,300; coaling facilities costing $18,700, annual saving, $3,900; an 8-tool ballast tamping unit costing about $4,500 which has increased extra-gang production in track surfacing about 40 per cent; and Diesel-electric locomotives which have reduced the cost of road-train and yard-switching operations approximately 37 per cent while saving an additional $100,000 per year by permitting the elimination of coaling plants, water stations, and other locomotive service facilities. This process which has been carried out on the North Western illustrates what has been done on other roads in accordance with their financial ability, Mr. Williams said.

"The drive for further economy and efficiency goes on with even greater intensity than before," he said in closing. And he added that the "modest" rate increase requested in the railroad petition is, in his opinion, "the very minimum requirement toward keeping the railroads in a position to furnish adequate service and continue the essential process of improvement in efficiency."

Mr. Andrus of the S. P. introduced an exhibit showing that his road will effect annual savings totaling more than $35¼ million on various projects and improvements costing about $95 million which have been completed or are under way. Largest of the savings will be the $26 million realized from the installation of 335 Diesel-electric locomotives at a total cost of about $78 million. Installations of centralized traffic control at a cost of $6.8 million are expected to result in annual savings of $1.8 million, while annual savings of $1.5 million are expected to be realized as a result of $200,000 allocated to the

Battelle Institute for research on combustion and fuel burning practices.

Mr. Andrus's statement also indicated that the S. P. has done something about "featherbedding," an issue which has been raised in some of the shipper presentations in opposition to the rate increase. The S. P. officer pointed out that his road successfully challenged the Arizona train-limit law, winning a favorable decision from the Supreme Court of the United States in June, 1945. The law, which had limited the length of trains to 70 cars, was declared unconstitutional by that decision; and the S. P., as Mr. Andrus put it, "was rewarded for its many years of efforts by being able to go ahead with a program of necessary siding extension and introduction of road freight Diesel operation to obtain an annual saving of $2,800,000."

Also, the road joined with other California roads in sponsoring the initiative measure, adopted at the November, 1948, election, to amend that state's "full-crew" law "so as to eliminate therefrom requirements for unneeded brakemen on freight trains and to give the (California) Public Utilities Commission authority to specify the number of brakemen required." This law had been in effect since 1911, and Mr. Andrus stated that it required "from one to five unneeded brakemen on freight trains under conditions commonly obtaining." The amendment became effective December 15, 1948, and Mr. Andrus put the prospective annual savings to the S. P. at $1,500,000.

He went on to assert that the railroads are prevented from effecting maximum economies in a "very large number of cases" because of the awards to labor organizations by the National Railroad Adjustment Board. This general statement, the S. P. executive said, was supported by a memorandum listing various specific cases which had been prepared for him by the S. P.'s wage and schedule officers. Examples which he gave of such cases included one wherein the board upheld a claim that a switchman should have been called to pilot a pile driver making a move of 700 ft. from a storage track to a point of work.

R.I. Has Invested $144.3 Million

Mr. Pritchett of the Rock Island testified that his road made capital investments totaling $144.3 million to promote safety and increase the efficiency and economy of operations during the 12-year period from 1937 to 1948, inclusive. This total included $71.8 million for roadway and structures and $73.3 million for new equipment and betterments to equipment. The roadway improvements included extensive grade-reduction and line-change projects and installations of new signaling and centralized traffic control. The latter have increased the track mileage covered by automatic signals to 3,276 as compared with 2,052 in 1936.

The new equipment acquired includes 166 Diesel-electric locomotives; and the delivery of other Diesels on order will permit the Dieselization of "virtually all through train operations, both passenger and freight, and approximately 70 per cent of yard operations," Mr. Pritchett said. He also referred to the new freight cars acquired in recent years, and to the installation of heavier rail.

To point up the efficiency obtained from the improved facilities, Mr. Pritchett noted that his road has been able to reduce the units of motive power assigned to its freight service from an average of 620 in 1937 to 385 in 1948, a cut of 37.7 per cent. "To further illustrate the benefits which have accrued," he continued, "in 1937 we operated a total of 14.7 million freight-train-miles and handled a total of 7.9 billion ton-miles. In 1948, we operated a total of 14.6 million freight-train-miles and handled 14.2 billion ton-miles. In other words, the decrease in freight-train-miles, 1948 under 1937, was 0.6 per cent, but the ton-miles in 1948 represent an increase of 79.4 per cent over 1937, with the result that the average net tons per train-mile increased from 540 in 1937 to 974 in 1948, or 80.4 per cent."

Mr. Vivian of the Western Lines' Statistical Bureau testified in support of that phase of the railroad petition which seeks to increase charges for protective (temperature-control) services to perishable freight. In its report of December 29, 1948, the commission refused to approve an interim increase in these charges. Mr. Vivian's testimony was a discussion of an exhibit which he introduced to show how the costs of furnishing the protective services have increased.

State Commissions

The witness for the National Association of Railroad and Utilities Commissioners was Richard V. Gilbert, an economist, who was formerly a member of the staff of the wartime Office of Price Administration. In that former role Dr. Gilbert was before the commission as a witness for O.P.A. when that agency was successful in having the Ex Parte 148 increase of 1942 suspended after it had been in effect for a year. Dr. Gilbert's testimony in the present case was based on statistical compilations from which he drew conclusions to the effect that the efficiency of railroad operations had not resumed in the postwar period the upward trend shown in the two decades before the war; and that the 1949 net railway operating income, without benefit of further rate increases, will range from $1,047 million to $1,283 million, depending upon various assumptions as to traffic volume, efficiency of operations, wage costs and prices of materials and supplies.

Thus the interim increase already allowed appeared to Dr. Gilbert "to be sufficient under reasonable assumptions" to permit the railroads to enjoy a 1949 net railway operating income approximating that indicated for the "constructive normal year" set up in the commission's Ex Parte 166 report of July, 1948. He also had figures indicating that the percentage of potential traffic carried by the railroads has been declining in recent years; and he found "some evidence" that the percentage of potential traffic enjoyed by the railroads "is responsive to the relative burden of transportation costs." The "constructive solution" of the railroads' financial problems, Dr. Gilbert went on to advise, "can be found only in the direction of improvement in the quality of service and improvement in the efficiency of operations."

The doctor was asked several questions by the commissioners as to his figures and calculations; and

he was also subjected to cross-examination by Mr. Aronson. During the course of this cross-examination, Dr. Gilbert appealed to the bench, saying that he "thoroughly and bitterly" resented the attitude of Mr. Aronson. Chairman Mahaffie said that the commission had no control over the "manners of counsel," and that he, Dr. Gilbert, was expected to answer the questions put to him.

Department of Agriculture

James K. Knudson, attorney for the Department of Agriculture, introduced five witnesses. They were the department's transportation consultant, C. E. Childe, formerly a member of the defunct Board of Investigation and Research; two members of the department's staff, J. C. Winter and Louis H. Bean; and two representatives of shipping interests—Allan B. Kline, president of the American Farm Bureau Federation, and V. L. Hodges of the Virginia Fisheries Association. The statements of Messrs. Kline and Hodges included testimony as to the prospective impact of the proposed increase on members of their organizations, while Dr. Bean made a statistical presentation on the general agricultural price and income situation. As he read them, the figures showed that "a further increase in freight rates could be expected to have adverse effects on the farmers' share of the consumer's dollar, on the farmers' share of the national income, and in further stimulating rising price trends and at the same time accentuating declining ones."

The testimony of Messrs. Childe and Winter related to the efficiency of railroad operations, and was thus an undertaking to make the point that the commission should tell the carriers to improve their financial situation by cutting costs rather than by raising rates. In the statement of 27 mimeographed pages, Mr. Childe, as he set it up, dealt with "two main points" as follows: "(1) That railroad rates are now excessive for the service performed, and (2) that railroad operating expenses are unduly high, and service is below reasonably attainable standards which are needed and should be provided in the public interest."

Mr. Winter's testimony, as he put it, was designed to show "the inadequacy of railroad performance in the handling of carload freight," and to measure "the effect of slow handling of traffic through yards and terminals, in the operating costs of the carriers." His statement was based on a study which in turn was based upon examination of "the actual records of shipments of a large number of cars moved by the Department of Agriculture and by private shippers." As noted in last week's issue, the department has before the commission a motion seeking to broaden the proceeding to require a showing by the railroads as to the extent to which they are supplying the adequate and efficient service contemplated by the Interstate Commerce Act.

Presentations made on behalf of shippers of various commodities were generally in opposition to the proposed increase. Many shippers also called for the restoration of traditional rate relationships which, they said, had been distorted by the percentage increases of recent years. The shippers also offered evidence as to prospective diversion of additional traffic from the railroads, and general economic testimony calculated to show that current conditions would not permit them to pass on to their customers an increase in freight rates. Other shipper presentations were made in the numerous verified statements submitted to the commission.

The Washington hearings ended on March 9 after extending over seven hearing days from their opening on March 1. The railroads requested a rebuttal hearing and the commission said that rebuttal evidence would be received in verified statements, due April 18. The next hearing sessions were scheduled for Chicago, beginning March 14.

New Book . . .

THE REGULATION OF RAILROAD ABANDONMENTS, by Charles R. Cherington, associate professor of government, Harvard University. 258 pages, tables. Published by the Harvard University Press, Cambridge, Mass., as one of the Harvard Political Studies. Price, $4.

As noted in the *Railway Age* of September 4, 1948, this book has two purposes—to give a comprehensive picture of federal regulation of railroad abandonments, and to draw therefrom whatever tentative conclusions are possible concerning problems of regulatory administration as a whole.

In pursuit of these purposes Professor Cherington apparently has studied nearly every abandonment application ever presented to the Interstate Commerce Commission. As a result, his account of the development of abandonment regulation, and of its application up to the time of World War II, may be considered, for all practical purposes, as final; any future study of the problem can safely be written as a sequel to this.

From this detailed and objective examination he concludes that the work of the commission in regulating railroad abandonments has "given reasonable satisfaction," but that — in addition to various minor procedural defects — the insistence on protection of local interests has tended to prevent "development of a planned, coherent regulatory strategy." "It is not possible," he writes, "to obtain any clear idea of the general directions which the regulation is taking. . . . Each decision may seem reasonable enough in itself, but the total record lacks coherence. . . . The commission has succeeded merely in exercising a limited amount of negative control. It has failed to play an aggressive role in shaping the course of this important trend in the transportation industry and it has neglected to integrate that trend with the other important developments within the industry."

The record indicates, he believes, that there is little need for any new national transportation planning agency, but ample room for internal regulatory reform within the framework of existing legislation, to obtain greater overall coordination of the various segments of transportation regulation, and greater consideration of the *national* interest in a "healthy, well-integrated *transportation* system." (Italics supplied.)

Professor Cherington thus fulfills his second purpose as successfully as his first, by drawing from experience in "one narrow field of administrative activity" a conclusion applicable to all transport regulation — a conclusion which is not, moreover, open to attack except by those having a selfish interest in maintenance of an unbalanced or chaotic transport industry. His book, aside from its possible reference value, is a genuine contribution to sound thinking on transportation regulation.

GENERAL NEWS

January Net Income Totaled $14 Million

Net railway operating income for month was $33,244,420

Class I railroads in January had an estimated net income, after interest and rentals, of $14,000,000, as compared with $19,000,000 in January, 1948, according to the Bureau of Railway Economics of the Association of American Railroads. The January net railway operating income, before interest and rentals, was $33,244,420, compared with January, 1948's $41,297,152. For the 12 months ended January 31, the rate of return was 4.35 per cent, as compared with 3.33 per cent for the 12 months ended January 31, 1948.

Gross in January, amounted to $730,686,347, compared with $750,734,787 in the same month of 1948, a decrease of 2.7 per cent. Operating expenses amounted to $616,269,017, compared with $615,855,516, an increase of 0.1 per cent. Thirty-eight Class I roads failed to earn interest and rentals in January, 1949, of which 12 were in the Eastern district, 4 in the Southern region and 22 in the Western district.

Class I railroads in the Eastern district in January had an estimated net income of $14,000,000, compared with $1,000,000 in the same month of 1948. Those same roads in January had a net railway operating income of $24,978,568, compared with $11,906,764. Gross in the Eastern district in January totaled $348,565,705, an increase of 2 per cent compared with the same month of 1948, while operating expenses totaled $285,162,265, a decrease of 2 per cent.

Class I roads in the Southern region in January had an estimated net income of $6,000,000, compared with $7,000,000 in the same month of 1948. Those same roads in January had a net railway operating income of $9,386,015, compared with $10,567,699. Gross in the Southern region in January totaled $106,606,783, a decrease of 3.8 per cent compared with the same month of 1948, while operating expenses totaled $85,734,966, a decrease of 1.5 per cent.

Class I roads in the Western district in January had an estimated deficit of $6,000,000, compared with a net income of $11,000,000 in the same month of 1948. Those same roads in January had a net railway operating deficit of $1,120,163, compared with a net railway operating income of $18,822,689. Gross in the Western district in January totaled $275,513,859, a decrease of 7.6 per cent compared with the same month in 1948, while operating expenses totaled $245,371,786, an increase of 3.2 per cent.

CLASS I RAILROADS
UNITED STATES
Month of January

	1949	1948
Total operating revenues	$730,686,347	$750,734,787
Total operating expenses	616,269,017	615,855,516
Operating ratio—per cent	84.34	82.03
Taxes	67,629,077	79,004,455
Net Railway Operating Income (before charges)	33,244,420	41,297,152
Net income, after charges (estimated)	14,000,000	19,000,000

Would Shift Federal Transport Activities

Hoover group wants Commerce Dept. to do non-regulatory work

Grouping in the Department of Commerce of all major transportation activities of the federal government, except the regulatory functions of the independent commissions, has been recommended in a report on that department which Congress has received from the Commission on Organization of the Executive Branch of the Government. With respect to railroad transportation, the commission, which has become known as the "Hoover Commission" because it is headed by former President Herbert Hoover, recommended transfer to the Commerce Department of Interstate Commerce Commission functions relating to formulation of railroad consolidation plans, car service, and safety.

Another recommendation called for transfer to the department of the Office of Defense Transportation and its continuance there on a permanent basis. O. D. T., which is scheduled to go out of existence on June 30, is now a unit of the Office for Emergency Management which is part of the Executive Office of the President. Meanwhile, the commission refused to recommend establishment of a new Department of Transportation, a plan which had been suggested by the "task force" that made its transportation studies.

Transportation "Only One Industry"

"The commission," its report said in that connection, "recognizes that transportation is only one industry among many with which the federal government is concerned. It would be quite inadvisable for the federal government to set up a department which would be devoted entirely to the problems of one industry. Moreover, since transportation is an element in the costs of practically every other industry, government policies on transportation should be coordinated with government policies toward industry in general."

Other I. C. C. functions which the commission would transfer to the Commerce Department are those relating to the safety of motor carrier operations. Its recommendations with respect to highway transport further called for transfer to Commerce of the Public Roads Administration, now part of the Federal Works Agency.

In recommending transfer of the railroad consolidation, car service and safety matters, the commission said that those activities "add to the already heavy administrative burden" of the I. C. C. and divert its attention from its "primary regulatory responsibilities." It added: "A board is not a satisfactory administrative device for executive functions. Moreover, experience in car service matters has demonstrated that the regulatory mechanism is inadequate to deal with the problems of railroad car supply in critical and prolonged periods of shortage. Thus, during the war, this responsibility was vested in the Office of Defense Transportation."

The commission supported its recommendations on highway transportation with this statement: "Motor-carrier safety functions of the Interstate Commerce Commission are highly technical in nature and are an executive function. In addition, they involve continuing co-

EMERGENCY BOARD TO DECIDE 40-HOUR WEEK APPLICATION

Spokesmen for both the carriers and the unions announced at the close of negotiations on March 8 that the emergency board which investigated the dispute between the railroads and the 16 non-operating brotherhoods would be asked to rule on points of dispute as to the intent of its report, recommendation and interpretation regarding application of the staggered 40-hour week. The decision of the three fact-finders, these spokesmen said, would be binding on both parties to the dispute.

operation with state agencies, a field in which the Public Roads Administration is active and for which it has set up machinery. On the basis of technical studies, safety regulations can be developed."

Aviation and Marine Proposals

With respect to civil aviation, the commission recommended that there be established in the Commerce Department a Bureau of Civil Aviation which would administer the present functions of the Civil Aeronautics Administration, and also have responsibility for promulgating air safety rules—with a right of review to the Civil Aeronautics Board from the promulgation, or refusal to promulgate, specific rules. The recommendation on the merchant marine called for placing the Maritime Commission's "business operations" within the Commerce Department. There was no recommendation on the Inland Waterways Corporation, but the commission said that this operator of the Federal Barge Lines would be covered in another report on "business enterprises of the government."

The present report's basic transport recommendation that all non-regulatory activities be grouped in the Commerce Department was followed by this list of matters which such a "transportation service" would study:

a. Physical needs of transportation.
b. Priority among these needs.
c. Costs of meeting these needs and methods of defraying them.
d. Governmental promotional programs directed toward achieving the most effective system at the lowest cost.
e. Military transportation requirements and their integration with civilian needs.
f. Most advantageous route patterns for extension of transportation services.

In connection with the latter, the report went on to suggest that "provision of new services in any given case should be weighed against all types of transportation service already provided, as, for example, a proposed new air route should be weighed not only against other air routes, but against all other types of transportation." Later on the report said that "hitherto, route patterns have been determined haphazardly upon a case-by-case basis by regulatory commissions." Its specific recommendation on the matter suggested that the Secretary of Commerce be assigned the duty of making over-all route programs for air, land, and water transportation; and that the secretary should also present his views to regulatory bodies when carriers make proposals at variance with his over-all programs.

Transportation for Defense

Another assignment, which the commission would give the Secretary of Commerce, would be that of insuring the preparation of plans "for the mobilization of the national transportation resources in the event of a national emergency." In that connection, it was assumed that the secretary would "coordinate his work with the National Security Resources Board." Wartime transportation requirements, the commission said, "must be carefully calculated and arrangements made for handling the most essential types of traffic."

The commission's recommendations were based on its findings as to what is now wrong with the federal transportation organization. Those findings stated, among other conclusions, that transport activities are now "scattered over many separate agencies, with consequent waste and overlap"; that there is a lack of coordination of government policies in the transport field; that transportation research is now carried on in "narrow segments of certain areas of transportation, and these segments are not coordinated"; and that the amount of subsidies included in mail contracts "is not clear under the present system of appropriations and accounting."

These findings were followed by a general statement of the commission's approach to the making of its specific recommendations. There the report said it was not the commission's purpose to outline detailed remedies for "all these faults," but rather "to establish such an organization as will be able to evolve remedies."

One of six 1,500-hp. branch-line Diesel-electric locomotives purchased by the Florida East Coast from Electro-Motive Division of General Motors Corporation at a cost of approximately $144,000 each. The new locomotives will supplant steam power on the Okeechobee branch

R.B.A. Calls Rail Solvency Vital to National Safety

Statement recommends 6 per cent return, use of public facilities

"Without adequate railways we can neither defend this nation nor provide its citizens with the foodstuffs, raw materials and finished products necessary to maintain our modern way of life," the Railway Business Association declared in a statement issued by its president, P. Harvey Middleton, at Chicago on March 5.

The statement, which described the railroads as "holding the front trenches of our private enterprise system," also called for a 6 per cent return on railway investment and permission for the railroads to "share equally with their competitors in the right to use all publicly owned and publicly maintained routes or ways."

"If there should be another war," the statement said, "it may not be preceded by any formal declarations. The margin of safety . . . may be a matter of hours. If, in those fateful hours, our railways were not fully prepared to transport our armed forces and their supplies . . . we should be at the mercy of any nation strong enough to challenge our power. With the sole exception of the armed forces themselves, no part of the complicated machinery of defense is more important than railway preparedness. And not even the armed forces could be maintained for long without a railway system in first-class order.

No Cheaper Insurance

"If the railways are to continue to serve the needs of our nation's economy in peacetime, and also to be ready at any moment to handle the enormous additional traffic of a world war—a responsibility far greater than that facing any other single industry—their income must be sufficient to meet that responsibility. It would be difficult to imagine any cheaper insurance for the nation as a whole than for regulatory authorities to permit railways to earn enough to maintain and improve their properties and to pay a reasonable return to those whose money is needed to keep the railways going. . . .

"For many years the earnings of the railways have been far too low. For the period 1926-1945 the railroads under Interstate Commerce Commission regulation earned an average return of 3.54 per cent, as against 6 per cent or more granted to public utility transportation companies regulated by over 40 state commissions. In the depressed 1930's, the railroads earned 2.22 per cent, or less than the return on government bonds. In a survey of 70 industrial groups showing ratio of net income to net worth in 1946, railroads were practically at the bottom of the list. The average for all manufacturing was 12.1 per cent, but for Class I railroads it was 2.3 per cent. In 1947, the return on net worth for all manufacturing was 17 per cent; for railroads, 3.6 per cent. In 1948, when freight traffic was well above any prewar year, and only slightly below the record peacetime year 1947, the railroads were able to earn a return on the net amount invested of 4.3 per cent. Out of this return the railroads must pay interest, rentals, and other fixed charges, and from what is left for the owners, there must be subtracted a considerable part of the cost of providing necessary improvements. . . .

"Including increases authorized by the I. C. C. to the end of 1948, the level of freight rates at the beginning of 1949 had increased less than half as much as the increase in the level of commodity prices generally. . . . In the post-World War II period, the ratio of freight rates to wholesale prices at destination of commodities transported by rail has been lower than at any time in many years. . . .

Six Per Cent Return

"The R. B. A. recommends that the railways should be accorded the opportunity to earn not less than 6 per cent on their property investment, to ensure uninterrupted solvency — to attract new capital when required—to promote continuous modernization, and to maintain safety and efficiency of operation.

"If the railway industry, so essential to our national security and prosperity, is so burdened that it can no longer pay its way, no longer has any credit with the investment public, and as a result suffers deterioration, then we may look for its eventual disintegration as a privately owned and privately operated enterprise.

"It should be emphasized, however, that a 6 per cent return does not and cannot mean that the investors of railroad securities will receive 6 per cent, but that this rate of return will be earned by the railroad industry as a whole. Only a part of the net income earned by a railroad is available for dividends. Generally speaking, actual expenditures, such as improvement of bridges, buildings, stations, improved signal equipment, reduction of grades or curves, substitution of heavy rail for light rail, and countless other improvements, must come from earnings. If the money is not earned, the improvements are not made.

"The railway industry meets all of its costs without subsidy, and no part of railway tax money ($987 million in 1948) is spent on maintenance and improvement of the railway plant. From the beginning the fixed property of all railways has been taxed where it lies, and its movable property where it is headquartered. When public routes were multiplied and inventors and manufacturers perfected the vehicles to operate on them, these government-financed ways encouraged competitive operations in hauling passengers and freight, but the railways are barred from the use of these publicly provided routes or ways, with the exception of supplemental and auxiliary services on the highways, notwithstanding that as taxpayers the railways contribute substantially toward the construction and maintenance of these competitive routes.

"The railroads should be permitted to share equally with their competitors in the right to use all publicly owned and publicly maintained routes or ways, provided that in every case the appropriate regulatory authority, after investigation and public hearings, reaches the conclusion that such coordinated services will be in the public interest.

"From 1921 to 1947 the railways spent over $27 billion for improvement and maintenance of fixed plant (excluding all expenses for rolling stock). . . . Much of the improvement consisted of straightening out curves, cutting down grades, putting in better signals or communications, improving shop machinery and practices. These improvements, plus the building and buying of better locomotives and cars, paid off—for the nation.

"From 1912 to 1921 various agencies of the federal, state, and local government spent over $53 billion for construction and maintenance of highways, waterways, and airways. The amount of government money invested in transportation routes and ways was therefore about double the amount invested

A RAILROAD IMPROVEMENT PROGRAM — RALPH BUDD'S CONCEPT

"Every kind of productive activity in the United States has made spectacular progress by introducing and perfecting new means of increasing output and making better goods. This is true of farming, mining and manufacturing — the three basic sources of material wealth. The demand for capital to continue this program of expansion and modernization in other industries is a matter of common knowledge.

"Railroads are in similar need of making capital additions and improvements. Their first and vital need, of course, is to replace their old wornout cars and locomotives with units of the latest types. Equally necessary, but not so obvious, is the replacing of more old track rail than has been done in order to catch up on the wear and tear due to the heavy traffic since 1941. A more extensive program of modernization of shops and shop tools should be undertaken. Many railroad shops are not as well equipped or as well arranged as they should be and many railroad shop tools are obsolescent. The new cars and locomotives naturally call for tools of greater precision than the older ones possess.

"These replacements and improvements in rolling stock and fixed property, however, are the minimum that must be done. They alone are not enough to meet the requirements that the United States should have the best railway service that it is practicable to provide. To do that there must be a constant striving towards physical perfection. As a goal it will never be reached, but in large degree it can be approached by having a betterment program that will in general revise some of the most restrictive sections of track each year and change them from slow zones to zones of unrestricted speed. Of course, this general revision of standards cannot be accomplished quickly, at least not in its entirety. But improvements can be made in many places simultaneously and the cumulative effect in a few years would be striking.

"I am well aware that precisely this plan is being followed by some roads but the rate at which it is going forward is determined in part by the other demands, including such cases as are presented here, upon the railroads, their present earnings and their future prospects.

"Unless these projects are pursued and the railway plant steadily improved the relative position of the railroads in the overall transport picture will retrogress. Arterial highways are being built to very high standards of construction and design. Separation of traffic moving in opposite directions by divided roadways and elimination of grade crossings of highways and railways, as well as elaborate layouts at inter-sections and junctions by so-called clover leaf patterns, greatly increase the capacity of the highway system and decrease the hazards of highway travel. These improvements will enable our competitors to make their service more efficient. They will also tend to increase the use of the private automobile. . . .

"My concern is that nothing shall happen which will prevent the railroads from keeping up with the progress of the country, with other types of commercial activities and with other forms of transportation. They must be permitted to take full advantage of present day advances in science, invention and techniques."

—Testimony of Burlington president before board hearing "extra-engineer-on-Diesels" case, February 24.

Mitigating Railroad Problem

"....The Interstate Commerce Commission has expressed fear that efforts by the railroads to meet the problem resulting from increased costs by increasing rates might be self-defeating and has urged large capital expenditures to reduce operating costs.

"Past experience of investors in railroad securities is not such as to encourage new investment. . . .

"....In 1929 I expressed the view that railroads should follow the traditional method of railroad accounting, which was to determine charges against revenue on the basis of the current price levels.

"Today the excess of cost of replacement over the amount provided as depreciation has to be met out of income after taxes have been deducted so that $1.60 of revenues provide only $1 for such necessary costs of maintenance.

"I suggest that the simplest and most constructive way of mitigating the problem of the railroads would be to revise the application of the income tax law to them. As a minimum, they should be permitted to deduct provisions for exhaustion on the basis of current price levels. In order to insure that the relief would be applied in the manner contemplated, the I.C.C. should require them to make the charges in their own accounting on the same basis.

"An alternative would be to relieve the railroads from income taxation on that portion of their income, as currently computed, which the commission deems necessary to enable them to survive and render the national service required from them and to leave a return on investment which would encourage the introduction of new money. The resulting loss of revenue to the federal government would be trivial in comparison with either the contribution to the preservation of the efficiency of the railroads or to the subsidies granted for other national purposes of comparable importance."

—George O. May, consulting associate, Price, Waterhouse & Co., in a letter to the New York Times.

by the privately owned railways in improvement and maintenance of their fixed plant. (See table.)

"The rates charged by the railways must cover a return on the investment in that fixed plant, but the common carriers on the highways, waterways, and airways can make rates with complete disregard of the cost of the route over which their vehicles or vessels operate.

"The railroads are now holding the front trenches of our private enterprise system. If they should be nationalized, such action will be speedily followed by national ownership or control of other forms of transportation, for the government would not permit competition in any field which it entered. Other basic industries would follow the same route — the banks and the coal mines, for example. While it is true that a recent poll of public opinion showed that fewer people favored government ownership and operation of railroads than in any previous poll on this question, it is also true that if the public really desires the preservation of private operation of railways, they must be willing to pay rates sufficient to ensure its survival."

Cost of Construction and Maintenance of Transportation Routes and Ways

PRIVATE CAPITAL	
Railways, Class I 1921-1947	
Maintenance of Way and Structures	$19,884,438,716
Gross Capital Expenditures, Roadway and Structures	7,157,793,000
Total—private capital	$27,042,231,716
PUBLIC EXPENDITURES—FEDERAL, STATE AND LOCAL	
Highways, 1921-1940	
(Note: Following items not segregated since beginning of World War II)	
Construction cost by states and local agencies	$20,197,725,000
Federal aid for construction cost	3,127,135,000
Maintenance, state and local agencies	14,410,616,000
Interest paid, state and local agencies, on bonds	3,586,528,000
	$41,322,004,000
Estimated cost, 1921-1947	$50,000,000,000
Airway Facilities, 1918-1945	
Research (National Advisory Committee for Aeronautics)	$ 151,515,290
Airways, etc.—Federal	881,091,938
Airmail subsidy—Federal	79,972,278
Airports, Federal	680,000,000
Airports, states and municipalities	120,000,000
	$ 1,912,579,506
Weather Reporting—Federal 1918-1947	90,000,000
Estimated cost, 1918-1947	$ 2,002,579,506
Waterways 1921-1946	
Construction for new work, maintenance, surveys, and plant	1,267,002,141
Total Public Expenditures	$53,269,581,647

Emergency Board Sees Labor Act Threatened

Warns against strike threats in Adjustment-Board cases

An emergency board has warned railroad labor unions that the usefulness of the Railway Labor Act "will soon be destroyed" if they persist in making strike-threat cases out of grievance proceedings which should be disposed of by the National Railroad Adjustment Board. The emergency board was that appointed by President Truman on February 14 to investigate a dispute between the Denver & Rio Grande Western and those of its employees who are represented by the Switchmen's Union of North America.

Members of the board were Chairman Frank M. Swacker of New York, Judge Adolph E. Wenke of the Supreme Court of Nebraska, and Leverett Edwards of Oklahoma City, Okla. The dispute involved approximately 150 grievances which would normally be brought before the Adjustment Board; and the union had threatened to call its members out on strike at 8:00 a.m., February 15.

The emergency board's report, which was submitted to President Truman on March 7, did not pass upon the grievances, its only recommendation being that the parties arbitrate the dispute. The board had made that recommendation to the parties at the close of its hearings; the D.&R.G.W. management agreed, but the union refused.

While the board said that definitive recommendations by it would have been "a perversion" of the Railway Labor Act, it nevertheless indicated that it might have made them if there were reasonable grounds for believing that they would be accepted. "In the instant case, however," the report said, "the union has bluntly stated that it would accept only such recommendations of this board as might be favorable to it and would persist in its intention to strike to enforce settlement of such others as this board might find unwarranted. In this situation we consider it would be a distinct disservice to make definitive recommendations with respect to the individual grievances."

A few of the grievances were settled during the hearings, and the board said it had examined the remaining ones, finding some "meritorious," some "de-

SEVENTY YEARS WITH ONE RAILROAD!

In December, 1878, the Nashville, Chattanooga & St. Louis employed, as a yard clerk, an 18-year-old youth named Edgar W. Scofield. Today, 70 years later, Mr. Scofield still actively serves the N.C. & St. L. as freight traffic agent at Chattanooga, Tenn.

The president of the road, W. S. Hackworth, recently presented the veteran railroader with the first 70-year service emblem ever issued by the company. At ceremonies in the Union Station at Nashville, Tenn., W. K. Tate, traffic vice-president, outlined Mr. Scofield's enviable record of service with the railroad during the Spanish-American War and World Wars I and II. He said that, among other things, Mr. Scofield was instrumental in expeditious handling of military traffic at Camp Forrest, Tenn., during the recent war.

An article in the road's employee magazine for January cites Mr. Scofield for a "strong and emphatic sense of loyalty to his company." It quotes a letter written by Mr. Scofield to an officer of the company as follows: "I have walked through cemeteries all my life and have yet to see an inscription that told of a man working himself to death." One fellow railroader, said the article, summed up Mr. Scofield's ability as a freight sales representative when he remarked that "there are no short hauls in Uncle Ed's territory."

batable," some "without merit," and "a few even frivolous." Still others, the report added, "are claims designed to procure an amendment of the contract by the device of claiming a violation of it instead of pursuing the orderly remedy provided by the Railway Labor Act for the amendment of the contract." The report also said that the union pressed for expedited handling of the grievances, and refused to postpone the strike date, even though the D. & R. G. W. management started conferences while it was "deeply involved in relief work necessitated by the recent storms."

The report further noted that the Switchmen's union has its own representative on the Adjustment Board's First Division to which the grievances should have been submitted. "In addition to the national board," the report continued, "the act contemplates that the parties may have system boards local to a single carrier and its employees; the act further makes provision for arbitration which may be utilized for the settlement of such disputes; and finally, it leaves the common law remedies through the courts available. There are, thus, four distinct forums to which recourse may be had for the peaceful and just disposition of disputes involving grievances . . . Under the design of the act, it is not its purpose to create emergency boards to pass on grievances."

Wants Czar to Focus National Attention on L. & D. Problems

Characterizing freight loss and damage as "basically, a moral issue — a crime" Claude C. Couch, district traffic manager, Glidden Company, Chicago, told the Stock Yards District Traffic Club on February 24 that the problem will never be solved until every man, woman and child is made aware of his common loss in the waste due to damage in transit. To create this national awareness, the speaker would have the Association of American Railroads obtain the services—for purposes of a national campaign—of a well-known figure—such as Herbert Hoover —who, while not himself versed in technicalities of transportation, would be able to administer an intensive program of education among the public.

Mr. Couch was the evening's speaker at a special loss and damage dinner of the club during which S. E. Kantowicz, assistant traffic manager. Spiegel, Inc., and general chairman of the claim prevention committee of the club, reviewed the work of his organization. While the Stock Yards District Traffic Club was organized only a year ago, it has in operation a tightly-policed program for loss and damage prevention, whereby the 27 carriers serving the stockyards district report to the committee all instances of poor packing and loading, which information is passed on to the violator by a fellow member of the club—rather than by a stranger. The goal of the committee for the year is to reduce claims for the district by at least 10 per cent. The club also has in operation a car cleaning program, a chief feature of which has been the instruction of loading personnel by firms in the district on proper methods of cleaning cars before release.

Membership of the club is limited to active traffic personnel of the 500-odd industrial firms in the Stock Yards, Central Manufacturing, and Kenwood districts, and representatives of the railroads serving them. The club is a "working organization," and holds regular monthly meetings to consider subjects carefully selected by a special executive committee. The area is said to be the largest single traffic source in the country—having originated or destined 545,426 cars in 1948.

The February 24 meeting was closed by the showing by the Gummed Industry Association of a sound slide film on proper packaging, and "Handle with Care," a Baltimore & Ohio film designed to educate employees in proper handling of l.c.l. at freighthouses.

Riders Determine New Schedules for Monon Trains

The Chicago, Indianapolis & Louisville rescheduled three of its four Chicago-Indianapolis passenger trains, effective March 6, to conform with the majority vote of passengers determined in a two-week on-train survey made as a part of the road's recently expanded program of research (see *Railway Age* of December 18, page 66). The vote was 2½ to 1 in favor of schedules which would allow Indianapolis passengers a longer day at their destination station. Consequently, schedules have been readjusted so that Indianapolis passengers—by leaving Indianapolis Union station at 7:00 a.m., or Boulevard station at 7:15 a.m.—may spend 6 hrs. 50 min. at Chicago, 1 hr. 10 min. longer than heretofore. Schedules in the reverse direction were readjusted.

Trainmen, Conductors Plan Drive For New Working Rule Changes

Not to be outdone by the engineers, firemen and non-operating employees, general chairmen of the Brotherhood of Railroad Trainmen and the Order of Railway Conductors, in a recent joint meeting at Cleveland, Ohio, outlined demands which may soon be served on individual railroads for additional changes in working rules.

At the same time, according to a recent issue of Trainman News, B. R. T. chairmen indicated that strike ballots would be circulated in the near future among more than 200,000 railroad employees if action is not taken soon on earlier demands for 15-day vacations with pay. (See *Railway Age*, November 6, 1948, page 56.)

The new demands, which Trainman News describes as independent of the vacation pay proposal, include a 40-hour week, with time and one-half on Sundays and holidays for all yard service employees; a minimum allowance to road train service employees of $5 per trip, in addition to all other compensation, for expenses away from home terminal; additional payment to baggagemen and all other trainmen required to handle mail; payment on minute basis of passenger service overtime and initial terminal delay; standardization of rates between territories, and other changes relating to method of payment for yard and train service employees and car retarder operators.

Revive Talk of Consolidated Terminal on Chicago Lake Front

Further consideration is being given to solution of Chicago's south-side passenger terminal problem through renewed study of a plan for a consolidated terminal on a site near the present Illinois Central station. The suggested solution has been developed by C. H. Mottier, vice-president and chief engineer of the I. C., and is, in effect, a revival of one of four plans originally developed in 1946 (see *Railway Age* of October 19, 1946).

The Chicago South Side Terminal Committee, which was formed with the specific purpose of studying the passenger station problem, last August rejected as too costly the idea of a consolidated terminal and suggested extensive modernization of existing properties as the solution (see *Railway Age* of September 4, 1948). The city government, which has shown no enthusiasm for the modernization suggestion, has since continued its efforts toward obtaining an acceptable plan for consolidating passenger properties.

The lakefront plan as proposed would provide facilities for 13 railroads now using the Dearborn, Grand Central and Central (I. C.) stations. The suggested plan could be expanded should owners of the La Salle street station—Chicago, Rock Island & Pacific and New York Central—join the consolidation.

Hugh W. Cross Nominated To Succeed Barnard on I.C.C.

Hugh W. Cross, former lieutenant governor of Illinois, has been nominated by President Truman for membership on the Interstate Commerce Commission as successor to the late George M. Barnard for the remainder of a term ending December 31, 1950. The President sent the nomination to the Senate on March 8, thus ending speculation as to who would get the appointment for which several candidates had been mentioned.

Mr. Cross is a Republican, the present political make-up of the commission having required the appointment of one

who was not a Democrat. The Interstate Commerce Act stipulates that not more than six of the eleven members shall be appointed from the same political party. The nominee is a lawyer who was born at Jerseyville, Ill., August 24, 1896. He was awarded his law degree by the University of Illinois, and was admitted to the bar in 1921. He maintains law offices at Jerseyville and at Alton, Ill., and also operates a farm at the former place.

Mr. Cross was elected to the Illinois General Assembly in 1932, and thereafter served four successive terms in that body of which he was speaker in 1939. He was elected lieutenant governor of Illinois in 1940, and served in that position for two successive terms ending with last year.

Alabama Express Rates

The Interstate Commerce Commission has discontinued the investigation of Alabama intrastate express rates which it instituted by an order dated October 19, 1948. The investigation, No. 30081, was instituted after the Public Service Commission of Alabama had refused to authorize the Railway Express Agency to make increases in line with the Ex Parte 163 interstate adjustment.

The discontinuing order said that the state commission has since authorized the increases, and that R.E.A. had requested dismissal of its petition for the I.C.C. investigation.

C. & E. I. Furnishes Trainmen Circular of Connecting Service

The Chicago & Eastern Illinois has prepared a "name train circular" for distribution to its passenger conductors and brakemen. The circular lists alphabetically all principal named passenger trains departing from Chicago. A conductor receiving a query about "The Hawkeye," for example, from a traveler who has no other detail about the train, will readily find the following information by referring to his copy of the circular:

Railroad	Illinois Central
Train Number	Eleven
Station	Twelfth Street
Departure	11:00 p.m.
Southside station	None
Destination	Iowa points
Frequency	Daily

The circular also shows the distance between Dearborn station—used by C. & E. I. trains—and other downtown stations, and the distance between the C. & E. I.'s station at Englewood and southside depots of other roads. The passenger traffic department issues the circular and keeps it current.

"Wild West" Virginia

In a flashback to the early days of railroading, the Baltimore & Ohio's "Ambassador," bound from Baltimore, Md., to Detroit, Mich., is reported to have been held up by four gunmen near Martinsburg, W. Va., on March 9. After allegedly robbing most or all of the passengers and crew, the men forced the crew to back the train to a grade crossing, where they escaped in a stolen automobile. Early reports of the robbery stated that a train porter and an unidentified passenger were injured during the robbery.

I.C.C. Refuses to Merge Bulwinkle-Act Applications

The Interstate Commerce Commission has denied a motion wherein the Department of Justice had asked the commission to consolidate proceedings relating to four applications filed by railroad groups for approval of agreements made pursuant to provisions of the Interstate Commerce Act's section 5a, which was added last year by the Bulwinkle-Reed Act. At the same time, the commission has changed the previously announced schedule of the separate hearings on the applications involved.

The applications are Section 5a Applications Nos. 2, 3, and 6 wherein western, eastern, and southern roads, respectively, seek approval of rate-procedures agreements; and No. 7, filed by railroad parties to the car-hire, demurrage and storage rules administered through the Association of American Railroads. The new schedule assigns the application of the eastern roads for hearing on May 4 at Washington, D.C., before Commissioner Rogers. It assigns the western roads' application for "further hearing" before Commissioner Rogers at Dallas, Tex., on April 19, meanwhile leaving unchanged the previous assignment of this application for initial hearing at Washington on April 6. The hearing on the southern roads' application, heretofore scheduled for March 28 at Montgomery, Ala., has been postponed to a date and place to be announced. Application No. 7 has not yet been assigned for hearing.

In support of its motion to consolidate the proceedings, the Department of Justice had alleged that the proposed pacts would be part of an "integrated mechanism" which is seeking "legal sanction and immunity for an existing private government of the railroad industry so far as traffic matters are concerned under the centralized direction and control" of the A.A.R. (see *Railway Age* of February 19, page 55). The railroad parties to the application replied to the motion, asking that it be denied.

The commission's denial order asserted that the proposed consolidation "would be contrary to the intent of section 17(3) of the Interstate Commerce Act in that it would so intermingle the issues as not to 'conduce to . . . proper dispatch' in the determination of these applications, and might require attendance at all hearings of parties interested in one application only, contrary to the provision of section 5(a) of the Administrative Procedures Act . . . that 'in fixing the times and places for hearings, due regard shall be had for the convenience and necessity of the parties or their representatives.'"

By other recent orders, the commission has permitted interventions in the proceedings. The American Short Line Railroad Association has been authorized to intervene in the eastern and western cases, and the Brotherhood of Locomotive Engineers has been authorized to intervene in the latter case. The National Industrial Traffic League has been authorized to intervene in the eastern, western, and southern cases, and in the proceeding (Section 5a Application No. 5) which involves an application filed by parties to the National Motor Freight Classification administered through American Trucking Associations.

Meanwhile, two new applications have been docketed by the commission. They are: No. 10, filed by inland waterway carriers, which proposes an agreement establishing a Waterways Freight Bureau; and No. 11, filed by motor carriers of new furniture and allied commodities, which proposes rate procedures to be administered through the General Tariff Bureau, Inc.

Frank C. Squire Reappointed To Railroad Retirement Board

Frank C. Squire, who has been serving under a recess appointment, has been nominated by President Truman for a new term as railroad management's representative on the Railroad Retirement Board. The President sent the nomination to the Senate on March 2. Mr. Squire's new term would run until August 29, 1953—five years from August 29, 1948, the expiration date of his previous term.

The President made the recess appointment under which Mr. Squire is now serving on August 26, 1948. He had submitted Mr. Squire's name to the Senate of the previous Congress on June 18, 1948, but no action was taken during the two remaining days of that session which adjourned on June 20. Mr. Squire has been a member of the board since 1943.

Freedom Train Purchase

Acquisition by the federal government of the Freedom Train for operation until July 5, 1951, is authorized by recently enacted legislation which has been signed by President Truman. The legislation (Public Law 13—81st Congress) assigns the job of directing the train's operation to the archivist of the United States who will have a board of advisers comprising a "Freedom Train Commission."

The commission will consist of the president pro tempore of the Senate, the speaker of the House, the minority leaders of both branches, the chairmen of the Senate and House committees

on post office and civil service, the attorney general, the librarian of Congress, the archivist, and five other members appointed by the President. The commission will "advise on and consent to the plans formulated by the archivist and submitted to it for exhibiting the Freedom Train, and with respect to its itinerary."

Members of the commission will serve without compensation, other than reimbursement for expenses incurred in the work. The act authorizes appropriations, not exceeding $2,500,000, for the purpose of carrying out its provisions.

Freight Car Loadings

Loadings of revenue freight in the week ended March 5 totaled 705,552 cars, the Association of American Railroads announced on March 10. This was an increase of 17,424 cars, or 2.5 percent, above the previous week, a decline of 86,432 cars, or 10.9 per cent, under the corresponding week last year, and a drop of 100,223 cars, or 12.4 per cent, under the equivalent 1947 week.

Loadings of revenue freight for the week ended February 26 totaled 688,128 cars, and the summary for that week as compiled by the Car Service Division, A. A. R., follows

REVENUE FREIGHT CAR LOADINGS

For the week ended Saturday, February 26

District	1949	1948	1947
Eastern	131,753	156,867	158,765
Allegheny	147,387	169,558	175,997
Pocahontas ...	56,826	69,874	67,447
Southern	120,107	138,462	141,984
Northwestern ..	72,315	75,209	97,324
Central Western	104,620	117,379	136,471
Southwestern ..	55,120	63,561	72,003
Total Western Districts	232,055	256,149	305,798
Total All Roads	688,128	790,910	849,991
Commodities:			
Grain and grain products	39,709	33,139	56,871
Livestock	8,604	8,447	13,179
Coal	145,665	191,763	185,080
Coke	15,054	14,894	14,482
Forest products	35,304	14,654	53,069
Ore	14,346	13,993	12,852
Merchandise l.c.l.	86,092	109,020	124,286
Miscellaneous ..	343,354	375,000	390,172
February 26 ..	688,128	790,910	849,991
February 19 ..	697,335	804,937	776,689
February 12 ..	699,442	733,870	799,977
February 5 ..	682,143	746,936	767,301
January 29 ...	679,255	726,345	835,051
Cumulative total 8 weeks	5,610,667	6,213,255	6,509,950

In Canada.—Carloadings for the week ended February 26 totaled 73,224 cars, compared with 70,591 cars for the previous week, and 76,422 cars for the corresponding week last year, according to the compilation of the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
February 26, 1949	73,224	32,340
February 28, 1948	76,422	38,288
Cumulative totals for Canada:		
February 26, 1949	574,171	258,773
February 28, 1948	581,172	283,503

RAIL EXECUTIVE SAYS "THANKS" TO YOUTHS WHO AVERTED POSSIBLE DERAILMENT.—When three South Bend (Ind.) youngsters spotted a large piece of iron imbedded in a tie and overlapping the track of the Grand Trunk Western recently, they notified the railroad and stood by to flag oncoming trains until the iron was removed. Charles A. Skog, vice-president and general manager of the G.T.W., expressed the road's appreciation for their deed by entertaining the three youths at a turkey luncheon in his business car. A U. S. savings bond and an opportunity to inspect the road's equipment were also given to each of the boys

B. & O. Appoints 150 Officers To Help in Public Relations

Approximately 150 key officers, located at various points on its system, have been designated by the Baltimore & Ohio to assist its public relations department by keeping local newspapers in their respective communities informed about B. & O. affairs.

The appointments, which are in addition to the men's regular duties, have been made, according to R. M. Van Sant, director of public relations, "because we feel that there is a real need for such a set-up; further, that by having it, we can get better coverage in the papers than we have had, can establish friendly relations with the press, and can enhance what we feel is the already good feeling toward the B. & O. in the communities that we serve."

Each of the men appointed has been furnished with a mimeographed memorandum of "Suggestions for Handling News." While they will work in cooperation with the road's public relations department, they will not normally be subject to close supervision or detailed instructions.

Waybill Studies

Five additional waybill studies have been issued recently by the Bureau of Transport Economics and Statistics of the Interstate Commerce Commission. They are:

Statement No. 491, Distribution of Freight Traffic and Revenue Averages by Commodity Groups and Rate Territories—Terminations in Second Quarter of 1948.

Statement No. 492, State-to-State Distribution of Tonnage by Commodity Groups—Terminations in Second Quarter of 1948.

Statement No. 493, Bituminous Coal Traffic and Revenue, by Territorial Movement, Length of Haul (Short-Line), and Type of Rate—Terminations in 1947.

Statement No. 495, Distribution of Freight Traffic and Revenue Averages in the Products of Agriculture Group by Commodity Classes and Rate Territories—Terminations in 1947.

Statement No. 496, Distribution of Freight Traffic and Revenue Averages in the Animals and Products Group by Commodity Classes and Rate Territories—Terminations in 1947.

Shipper Volunteers to Salvage Its Unclaimed Freight

Johnson & Johnson, manufacturer of surgical supplies, has notified the railroads that, to keep substandard goods from reaching the consumer, it will salvage all unclaimed merchandise bearing the firm's name. The company cites instances where carriers have sold unclaimed J. & J. freight which had been on hand for an extended period and, as a result, had deteriorated.

W. K. Cabot, traffic manager of the company, notified the Freight Claim division, Association of American Railroads, of its offer. He stated: "If every carrier will return on-hand freight of ours to the Johnson & Johnson plant indicated on the shipping case, we will do one of three things: (1) establish proof of ownership, and apply the salvage against the items; (2) refund the amount of salvage if a claim has been paid on the basis of that short-

age; or (3) if we cannot establish proof of ownership, we will salvage the merchandise and give the carrier prompt, and full credit for the salvage value."

Additional General News appears on pages 120 & 122.

ORGANIZATIONS

W. G. Vollmer, president of the Texas & Pacific, will address the **Southwest Shippers Advisory Board** on March 18, at its eightieth regular meeting in the Buccaneer Hotel, Galveston, Tex. Another speaker will be A. L. Green, special representative, Freight Claim Division, Association of American Railroads, whose subject will be "How Are We Doing?" Committees of the board will meet on March 17.

Laurence F. Whittemore, president of the New York, New Haven & Hartford will be the guest speaker at the next meeting of the **Western Railway Club**, on March 21, 6 p.m., at the Hotel Sherman, Chicago.

The next meeting of the **Car Department Association of St. Louis** will be held on March 22, 8 p.m., at the Hotel DeSoto, St. Louis, Mo. W. G. Gray, railway development engineer, Pittsburgh Steel Company, will speak on "The Tubular Axle" and a picture on manufacture of steel also will be shown.

The thirty-second annual meeting and banquet of the **Pacific Railway Club** will be held on March 23, at 6:30 p.m., in the Palace Hotel, San Francisco, Cal. Hon. Goodwin J. Knight, lieutenant governor of California, will address the club on "Democracy Is Not For Lazy People." Harry A. Mitchell, president, Western Pacific, as guest of honor, will be presented with an honorary membership in the club.

The **Railway Club of Pittsburgh** will hold its next meeting on March 24, at 8 p.m., in the Fort Pitt Hotel, Pittsburgh, Pa. W. P. Arnold, manager of railroad sales, Wood Preserving division, Koppers Company, will talk on "Treated Timber For Railroads."

George W. Mitchell, director of finance for the state of Illinois was a guest of the **Western Association of Railway Tax Commissioners** at their fourteenth annual conference in Chicago, February 8. He spoke briefly commending the railways for their cooperation with the department of revenue and their support of the National Tax Association.

William E. Deaton, tax commissioner of the Elgin, Joliet & Eastern, was elected president and received a detailed report of proposed legislation in all sections of the country directed at collecting increased property taxes from public utilities. He analyzed problems facing school boards and urged all members of the association to cooperate in school projects as far as possible. "Few people realize the extent that public schools depend upon the taxes paid by railroads," he said.

W. K. Bush, general tax agent of the Chicago, Burlington & Quincy, G. W. Brandon, commissioner of the Minneapolis & St. Louis, and W. E. Kline, commissioner of the Missouri Pacific, were elected vice-presidents, and R. G. Bundy, commissioner of the Chicago, Milwaukee, St. Paul & Pacific was reelected secretary-treasurer. Membership in the association has grown in 14 years from 17 to 163; 90 members were present at the conference.

SUPPLY TRADE

W. C. Keeran, formerly manager of production for the **Roth Manufacturing Company** (wholly-owned subsidiary of the **Vapor Heating Corporation**) at Chicago, has been elected vice-president in charge of manufacturing operations.

W. M. Parrish, assistant sales manager, manufacturers' sales, industrial power division, **International Harvester Company,** has retired after more than 24 years of service with the company.

R. B. Crean, who has been associated with the **Baldwin Locomotive Works** since 1943, has been appointed manager of a newly created Diesel renewal parts department, which has been formed to render a complete service in renewal parts, particularly to the company's railroad customers. The department will include sales and warehousing of all Diesel renewal parts, both in the field and in the company's headquarters at Eddystone, Pa.

J. Reine, formerly manager of the Tacoma, Wash., branch of the **Graybar Electric Company,** has been appointed manager of the Portland, Ore., branch, effective March 21, and **R. J. Franzen,** formerly assistant to the lines manager at Seattle, Wash., has been appointed manager of the Tacoma branch. The company also has announced, effective April 1, the appointment of **E. E. Martin,** formerly assistant district manager at Boston, Mass., as New England district manager at Boston, to succeed **W. H. MacCrellish,** who is retiring after 41 years with the company.

John M. Mulholand, formerly manager of railroad sales of the **Youngstown Sheet & Tube Co.,** has been appointed traffic manager, at Chicago, effective April 1. The company also has announced that **Harry H. Bascom,** assistant traffic manager in charge of the Chicago traffic department, will retire April 30, after more than 32 years with the company.

The **Minneapolis-Honeywell Regulator Company** has announced the acquisition of the assets of the **H. Belfield Company,** manufacturers of control valves. **Howard L. Murray,** president of Belfield, will be vice-president of Minneapolis-Honeywell, in charge of the new acquisition, which will be known as the Belfield valve division of Minneapolis-Honeywell.

Luther A. Kleber has been appointed assistant vice-president—manufacturing of the **General Steel Castings Corporation,** with jurisdiction over the Eddystone, Pa., and Granite City, Ill., plants. He will maintain headquarters at Granite City. Mr. Kleber joined the Commonwealth plant at Granite City in September, 1940, as assistant superintendent of the foundry, core and pattern departments. He was appointed superintendent in October, 1944, and, since October, 1947, has been assistant works manager. Before joining General Steel Castings, Mr. Kleber was with the Taylor-Wharton Iron & Steel Co.

Luther A. Kleber

OBITUARY

J. W. Miller, co-founder and executive vice-president of the John W. Miller Company, New York, died on March 3, after a long illness. Mr. Miller helped, in 1939, to form the Miller-Lewis Railroad Equipment Corporation, which, in 1944, became the John W. Miller Company. He wrote and published many articles on railroad taxes and reemployment on railroads.

Charles P. Lovell, who has been associated with the New York Air Brake Company and its predecessor, the Eames Vacuum Brake Company, since June, 1887, died on February 28. Mr. Lovell was born in Lincolnshire, Eng-

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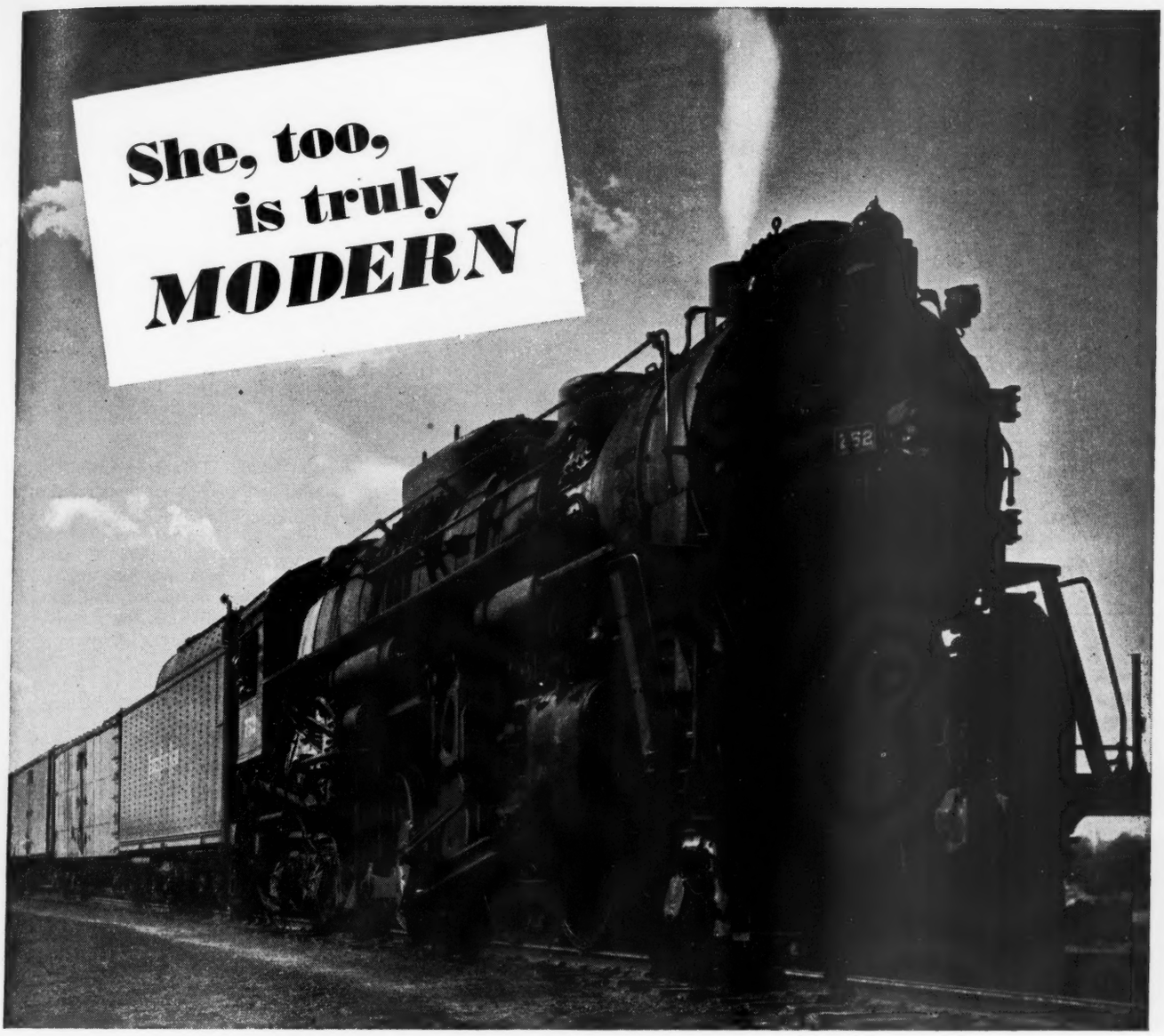


She doesn't wear chrome trim, and her paint is black, but she, too, is truly modern. She was built for a job — a modern job — and she does it well.

With planned scheduling she can stay on the road 16 and 18 hours a day, 27 or 28 days a month. With proper servicing — and such servicing facilities save more than they cost — she can be turned around in an hour or two. With her modern design, based on progressive engineering, her maintenance costs are low. And with equal attention, she — the modern steam locomotive — will give you more train-miles, more ton-miles, more passenger-car miles per year for each dollar of investment than any other type of motive power.

There is a place for steam, and in this place the *modern* steam locomotive is doing an outstanding job. We are continuing to build such locomotives.

LIMA HAMILTON CORPORATION

DIVISIONS: *Lima, Ohio* — Lima Locomotive Works Division; Lima Shovel and Crane Division. *Hamilton, Ohio* — Hooven, Owens, Rentschler Co.; Niles Tool Works Co.

PRINCIPAL PRODUCTS: Locomotives; Cranes and shovels; Niles heavy machine tools; Hamilton diesel and steam engines; Hamilton heavy metal stamping presses; Hamilton-Kruse automatic can-making machinery; Special heavy machinery; Heavy iron castings; Weldments.

land, on December 8, 1864, and came to the United States in 1871. He began his business career at 14 as an apprentice on the Chicago, Rock Island & Pacific, where he remained until he joined New York Air Brake as a service engineer. In his work he assisted the Trans-Siberian, the Great Northern, the Union Pacific, the St. Louis-San Francisco, the Missouri-Kansas-Texas, the Chicago & Eastern Illinois, the New York Central and the Illinois Central with problems concerning air brake equipment and operation.

Charles H. Longfield, vice-president and general sales manager of the Youngstown Sheet & Tube Co., died of a heart attack on March 7.

EQUIPMENT AND SUPPLIES

FREIGHT CARS

10,315 Freight Cars Delivered in February

Freight-train cars for domestic use delivered during February totaled 10,315, including 2,894 delivered by railroad shops, compared with January deliveries of 8,913 cars, which included 2,783 delivered by railroad shops, the American Railway Car Institute has announced. February deliveries included 1,854 box cars, 5,192 hopper cars, 1,346 gondola cars, 1,348 refrigerator cars, 470 tank cars and 105 cars of other types.

Freight-train cars ordered last month for domestic use numbered 332, all ordered from contract car builders, compared with January orders for 1,568 cars, which included 175 from railroad shops, the institute said. Freight-train cars for domestic use on order and undelivered on March 1 amounted to 85,974, including 33,336 on order from railroad shops, compared with a total of 96,464 cars on order February 1, and 121,936 cars on order March 1, 1948.

LOCOMOTIVES

The **Chicago, St. Paul, Minneapolis & Omaha,** subsidiary of the Chicago & North Western, has ordered six 1,500-hp. Diesel-electric freight locomotives from the Electro-Motive Division of General Motors Corporation, at an estimated cost of $1,102,600.

The **Erie** has ordered nine 1,000-hp. Diesel-electric switching locomotives for delivery during July and August. Four will be built by the Lima-Hamilton Corporation and five by the Baldwin Locomotive Works. Three of the new locomotives will be assigned at Akron, Ohio; two on the Franklin, Pa.-Oil City branch; and one each at Galion, Ohio, Ashland, Middletown, N. Y., and Paterson, N. J.

The **Norfolk & Western** has authorized construction in its Roanoke, Va., shops of 13 freight and passenger locomotives at a total estimated cost of $3,650,000. Work is expected to begin in January, 1950. Seven of the new locomotives will be compound Mallets, class Y6b, 2-8-8-2, for freight service; three will be single expansion articulated locomotives, class A, 2-6-6-4, for freight or passenger service; and three will be class J, 4-8-4, for passenger service. The class A locomotives will be equipped with lightweight rods and reciprocating parts; the rod connection pins will have roller bearings.

Directors of the **St. Louis-San Francisco** have authorized the road to purchase 20 1,500-hp. all-purpose road switchers to permit "complete Dieselization" of certain lines and secure "maximum benefits" thereon.

SIGNALING

The **St. Louis-San Francisco** has ordered from the Union Switch & Signal Co. materials to extend the existing Afton (Okla.)-Tulsa centralized traffic control system an additional 66 mi. to Monett, Mo., where the present C.T.C. system between Nichols and Monett ends. The control point for the Tulsa-Monett territory will remain at Tulsa, with a 2½-ft. section added to the present 7½-ft. Style-C control machine. The order involves H-2 searchlight high and dwarf signals, Style M-22A dual-control and M-2 electric switch layouts, Style SL-6A electric locks for hand-operated main-line switches, U-5 switch circuit controllers, complete coded carrier office and field apparatus, necessary relays, rectifiers, transformers and housings. Field work will be handled by railway forces.

CONSTRUCTION

Illinois Terminal.—This road will undertake the following projects during 1949, estimated costs being shown in parentheses: New passenger station facilities at Granite City, Ill. ($35,000); new passenger and freight terminal and mechanical facilities at East Peoria, Ill. ($100,000); and relocation of main track at Selbytown, between Williamsville, Ill., and Springfield ($30,000).

Great Northern.—This road has authorized the following projects, estimated costs being shown in parentheses: Install load shifter at Havre, Mont. ($25,000); repair and make improvements to elevators in passenger station at Minneapolis, Minn. ($25,000); install propane gas storage and bottling facilities (jointly with the Northern Pacific) at Seattle, Wash. ($50,000); install ore car shakeout and locomotive crane at Allouez, Wis. ($55,000); construct gravel pit and quarry tracks at Blaisdell, N. Dak. ($89,000); and improve and extend coach watering facilities at Havre ($26,000).

International-Great Northern. — This road is constructing a new passenger station at Austin, Tex., at an estimated cost of $150,000. The 48-ft. by 130-ft. structure is of modified Spanish architectural style with brick walls, steel windows and tile roof. The station will connect with a steel train shed 307 ft. long.

Missouri Pacific.—This road intends to install a two-way intercommunication and loud speaker paging system at Locust street and Hole yards, North Little Rock, Ark., at an estimated cost of $54,100. Concrete foundation for two towers has been completed and plans have been prepared for tower superstructures. Railroad forces are performing the work.

Southern Pacific.—Army engineers have announced plans to construct a vertical lift railroad bridge connecting Oakland, Cal., and Alameda, across the estuary at Fruitvale avenue. The new structure, which is to cost in excess of $1,000,000 and require approximately 18 months to complete, will handle S. P. rail traffic which now moves over a combination vehicular-railroad bridge built in the 1890's. The new bridge is to have a clear span between fenders of 200 ft., and a vertical clearance of 13 ft. in closed position and 135 ft. in open position. Its superstructure will be of structural steel, and the main bridge piers, abutments and connecting girders are to be of reinforced concrete. Machinery houses will be located atop the towers. Bids for substructure work have been invited, while plans and specifications on the superstructure work will be completed about May 15. It is expected that contracts for the latter phase of the project will be awarded this summer.

ABANDONMENTS

Division 4 of the Interstate Commerce Commission has **authorized:**

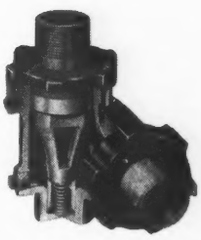
Kentucky & Tennessee — To abandon an 8.3-mi. line extending from White Oak Junction, Ky., to Bell Farm. The report stated that this line was constructed in 1916 to serve coal mines, which were closed in 1938. Principal traffic since that time has been logs shipped from Bell Farm; and that traffic was practically all lost in October, 1948, when the completion of a new highway resulted in its diversion to trucks.

News Department continued on next left-hand page

ENGINE-TENDER CONNECTIONS
with FRANKLIN SLEEVE JOINTS

Go longer without leaking ...Cost less to repair

THIS IS THE GASKET: The gasket of any joint is the heart of your maintenance problem. The Franklin gasket is rectangular in section, circular in form, and packs against flat surfaces. Its cost is only a fraction of gaskets used in other joints. It wears slowly and evenly, top and bottom, with wear automatically taken up by the spring in the joint. Many roads have found average life to be a year or more.



THIS IS THE JOINT: It is a double sleeve joint, with widely spaced bearings. The sleeve will not tilt or rock in the body — it will normally last for years. You cannot bind the joint by tightening the nut; flow area never changes regardless of angle of turn.

THIS IS THE CONNECTION: It is made up of three sleeve joints plus necessary pipe. Vertical drop between joint centers can be as little as 9 inches, and still give complete flexibility with only three joints — a distinct advantage in close quarters.

Cut costs of engine-tender connection maintenance with the Franklin Sleeve Joint. Available for air, steam or oil — in sizes from ½" to 2½".

FRANKLIN RAILWAY SUPPLY COMPANY

A CORPORATION

NEW YORK • CHICAGO • MONTREAL

STEAM DISTRIBUTION SYSTEM • BOOSTER • RADIAL BUFFER • COMPENSATOR AND SNUBBER • POWER REVERSE GEARS
AUTOMATIC FIRE DOORS • DRIVING BOX LUBRICATORS • STEAM GRATE SHAKERS • FLEXIBLE JOINTS • CAR CONNECTION

Reading—To abandon that portion of its Schuylkill and Susquehanna branch extending from a point near Pine Grove, Pa., to the end of the branch at Rausch Gap, 12.7 miles.

FINANCIAL

Jersey Central Revamp Plan Approved by the I.C.C.

The Interstate Commerce Commission has approved, with an amendment, the Central of New Jersey's plan for modifying some of its outstanding securities under the so-called Mahaffie Act, (section 20b of the Interstate Commerce Act). The required amendment will provide for cumulative voting for directors, but the effective date of the provision will be deferred for at least six years. With that change, the commission's decision (in Finance Docket No. 16211) authorizes submission of the plan to holders of the affected securities—"except the applicant and the Reading Company."

Some bonds of the issues involved are in the C. N. J. treasury while others are held by the Reading, which also owns 157,840 shares of 57½ per cent of C. N. J. common stock presently outstanding. Exclusion of these securities from the vote on the plan was pursuant to that provision of section 20b which stipulates that "for the purposes of this section a security or an evidence of indebtedness shall not be deemed to be outstanding if in the determination of the commission the assent of the holder thereof to any proposed alteration or modification is within the control of the carrier or of any person or persons controlling the carrier."

The C. N. J. is also involved in a proceeding for reorganization under section 77 of the Bankruptcy Act, and has been operated by trustees since November, 1939. In proposing the present voluntary revamp, the road hopes to render unnecessary further proceedings in its bankruptcy case. This course has been approved by the bankruptcy court which has also suspended the section 77 proceeding insofar as it relates to plans of reorganization filed therein. Acceptance by the interested security holders of the voluntary revamp plan will result in a reduction of $802,893 in the C. N. J.'s annual fixed charges, the funding of unpaid interest, provision for future financing, retirement of debt and use of earnings for capital improvements. The annual fixed charges now total $5,007,216.

The proposed modifications would affect the general mortgage bonds and the common stock. The mortgage bonds, due July 1, 1987, are now outstanding in the amount of $48,731,000, of which $4,990,000 bear interest at 4 per cent and $43,741,000 at 5 per cent. Unpaid interest on these bonds totals $16,706,550. Under the plan, the interest rate would become 3¼ per cent, effective January 1, 1949, and remain there until the maturity of the bonds—"and thereafter, if the bonds are not paid," it would become "the highest rate permitted by law."

The unpaid interest for two years, amounting to $4,773,300, would be paid in cash, and the remaining $11,933,250 would be financed by an issue of non-interest-bearing certificates without maturity. Holders of the 5 per cent bonds would receive these interest certificates in the amount of $250 for each $1,000 of bondholdings, while holders of the 4 per cent bonds would receive $200 in certificates for each $1,000 of their bondholdings.

There would also be distributed to the bondholders 274,368 shares of common stock, a new $50-par issue designated class A. The distribution would be on the basis of the relative reductions in interest rates — 5.979 shares for each $1,000 of 5 per cent bonds and 2.565 shares for each $1,000 of 4 per cent bonds. The like amount of common stock now outstanding, i. e., 274,368 shares, would be designated class B and would have its par value per share reduced from $100 to $50.

The interest certificates would be redeemable at any time at their face amounts or by calls for tenders, and the plan provides that until they are all retired (a) 50 per cent of income available in any year after payment of fixed charges must be used for such retirements, and (b) that the remaining income be applied first for capital improvements to the extent other funds are not available, and second to payment into a capital fund of a sum sufficient to bring the fund up to $2,500,000 as of the end of the preceding calendar year. After the interest certificates are retired, and until the principal amount of the general mortgage bonds presently outstanding is reduced to $24,000,000, and until the amount of any additional series of such bonds hereafter issued shall be reduced to 50 per cent of the amount originally issued, half of the available income after fixed charges must be used for the retirement of the bonds. The remainder is to be used first for capital improvements, second for the capital fund, and third for any other corporate purpose.

After retirement of the debt to the levels specified above, the plan provides for annual payments into a sinking fund for further retirements of the bonds. Meanwhile, the general mortgage would be open to permit future financing. A working capital fund of $4,000,000 would be set aside out of cash at present on hand.

No dividends would be permitted on the stock until all the interest certificates were retired. Class A and B stockholders would be entitled to one vote per share, but until the retirement of all interest certificates the holders would vote by classes. For a period of six years following consummation of the plan, the class A stockholders would be entitled to elect four members and the holders of class B stock five members of a nine-man board of directors. If all interest certificates had not been retired by the end of the six-year period, the class A holders would be entitled to elect five directors and the class B holders four until retirement of the certificates. Following such retirement, the two classes of stock would vote together.

During the initial six-year period, the C. N. J. would be operated by separate executive officers (other than the chairman of the board of directors representing class B stock) and could not have any joint officers with either the Reading or Baltimore & Ohio—"except in those instances when it is in the best interests of the property and such joint officer is elected by or appointed with the approval of a majority of the directors elected by the holders of class A stock voting separately and a majority of the directors elected by the holders of class B stock voting separately." Another provision of the plan promises that all existing joint arrangements with the Reading and B. & O. will be analyzed by a committee composed of the C. N. J. trustee and representatives of the Reading and B. & O., as the case may be, "in order that there may be assurance that such arrangements are on a fair and equitable basis" insofar as the C. N. J. is concerned.

As to cumulative voting for directors, the commission had been urged by some parties to make such a provision effective with consummation of the plan. It noted, however, that the Reading which "has the power to have the application withdrawn," opposed cumulative voting during the initial period when the stock would be voted by classes, but did not object to it thereafter. The required amendment will provide for cumulative voting "after a period of six years following the date as of which the plan is consummated and after the retirement of the interest certificates but not prior thereto."

Chicago, Burlington & Quincy.—*New Director.*—Ellsworth Moser, president of the U. S. National Bank of Omaha, Neb., has been elected a director of this road, succeeding the late Herbert M. Bushnell, who was also president of the Omaha bank.

Chicago, Burlington & Quincy.—*Trackage Rights.*—The Interstate Commerce Commission has granted the Brotherhood of Railroad Trainmen permission to intervene in the proceeding involving this road's application for approval of its plan to acquire from the Gulf, Mobile & Ohio trackage rights for freight service between Rock Creek Junction, Mo., and Francis, about 158 miles (see *Railway Age* of January 1,

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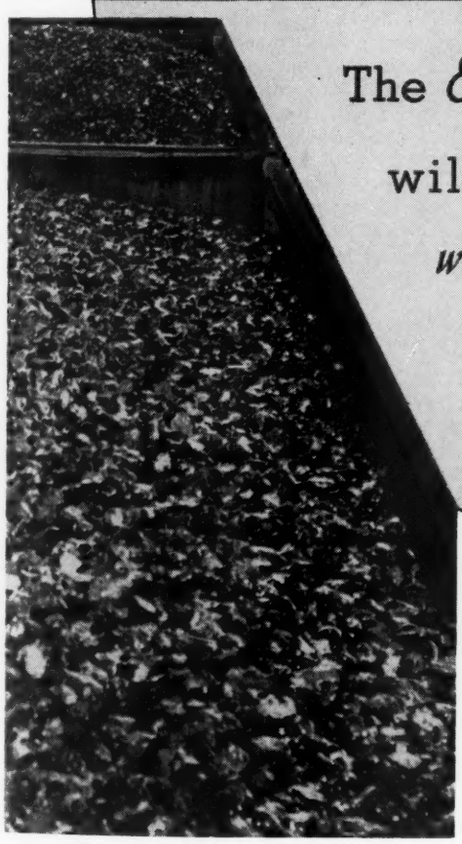
You Can't Control the Price of Fuel

but . . .

You Can Control

FUEL WASTE caused

by Boiler Carryover



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page 53). In its petition for intervention, the B.R.T. stated that many of its members, employed by the C.B.&Q., now reside in Cameron, Mo., Hamilton, Chillicothe, Meadville, Brookfield and Hannibal, and that granting of the application would result in diminution of freight service now being provided those communities, thus requiring the trainmen to move their homes to various other communities. A hearing on the application is scheduled to be held at St. Louis, Mo., on March 14.

Pennsylvania-Wabash.—*Control of D. T. & I.*—The Interstate Commerce Commission has granted the Baltimore & Ohio permission to intervene in the proceeding involving the application of these roads for authority to acquire control of the Detroit, Toledo & Ironton from the Pennroad Corporation (see *Railway Age* of January 29, page 46.) In its petition for intervention, the B. & O. said that it interchanges traffic with the D. T. & I., at several points in Ohio, and with the P. R. R. and Wabash at many points in the same territory; and that the P. R. R., the Wabash and the D. T. & I. actively compete with each other with respect to a substantial volume of traffic between points on their respective lines, and also with respect to traffic interchanged with them by the B. & O. and other carriers. The B. & O. contended that the acquisition of the D. T. & I. as contemplated would eliminate competition between the P. R. R., the Wabash and the D. T. & I., impair the competition between the B. & O. and other carriers and the P. R. R. and the Wabash, and adversely affect the B. & O. and adequate transportation service to the public in the territory involved. Further, the petition stated that approval of such a transaction would be inconsistent with the public interest unless conditioned upon a requirement that the B. & O. be included by grant to it of trackage rights for freight service over that portion of the D. T. & I. between Ottawa, Ohio, and Hamler and Detroit, Mich., including the right to use the terminals of the D. T. & I. in Detroit. A hearing on the application is scheduled to be held March 22 at Washington, D. C.

New Securities

Applications have been filed with the Interstate Commerce Commission by:

Delaware, Lackawanna & Western.—To assume liability for $3,780,000 of series H equipment trust certificates to finance in part the following equipment:

	Description and builder	Estimated Unit Cost
10	1,000-hp. Diesel-electric switching locomotives (American Locomotive Company)	$102,400
300	50-ton steel-sheathed box cars (Magor Car Corporation)	5,191
500	50-ton steel hopper cars (American Car & Foundry Co.)	4,400

Total estimated cost of all equipment is $4,781,300. The certificates would be dated March 15, and would be sold on competitive bids, which would determine the interest rate and whether the issue would mature over a 10- or 15-year period.

Northern Pacific - Great Northern — To assume liability as guarantors for $4,500,000 of equipment trust certificates which the Spokane, Portland & Seattle has applied for authority to issue (see *Railway Age* of March 5, page 69).

St. Louis - San Francisco — To assume liability for $4,260,000 of series D equipment trust certificates to finance in part the acquisition of the following equipment:

	Description and builder	Estimated Unit Cost
2	4,500-hp. Diesel-electric freight locomotives consisting of 2 1,500-hp. lead and 1 1,500-hp. booster units (American Locomotive Company)	$472,825
5	1,500-hp Diesel - electric road-switching locomotives (American)	144,475
6	1,000-hp. Diesel-electric switching Electro - Motive Division (General Motors Corporation)	102,500
700	55-ton all-steel, open top hopper cars (Pullman - Standard Car Manufacturing Company)	3,855
130	10,000-gal. tank cars (American Car & Foundry Co.)	5,377

Total estimated cost of all equipment is $5,680,647. The certificates would be dated March 15, and would mature in 15 annual installments of $284,000 each, beginning March 15, 1950. They would be sold on the basis of competitive bids and the interest rate would be fixed by such bids.

Division 4 of the I. C. C. has **authorized:**

Denver & Rio Grande Western.—To assume liability for $6,900,000 of series N equipment trust certificates, proceeds of which will be applied toward purchase of equipment estimated to cost $9,203,860 (see *Railway Age* of February 12, page 68). The certificates will be dated April 1 and mature in 30 semi-annual installments of $230,000 each, beginning October 1. The commission's report approved a selling price of 99.158 with a 2⅜ per cent interest rate—the bid of Salomon Bros. & Hutzler and associates, to make the average annual interest cost approximately 2.5 per cent. The certificates were reoffered to the public at prices yielding from 1.3 to 2.7 per cent, according to maturity.

Average Prices Stocks and Bonds

	Mar. 8	Last week	Last year
Average price of 20 representative railway stocks	39.73	39.33	46.71
Average price of 20 representative railway bonds	87.60	87.36	86.15

Dividends Declared

Bangor & Aroostook.—5% preferred, $1.25, quarterly, payable April 1 to holders of record March 8.

Denver & Rio Grande Western.—common, $1.00; 5% preferred, $5.00; both payable March 15 to holders of record March 9.

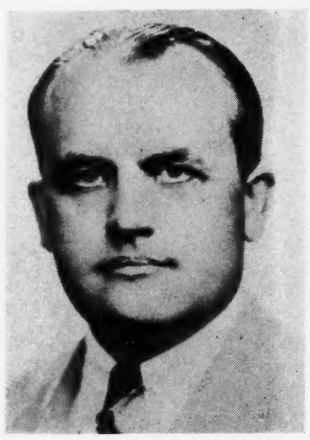
Maine Central.—6% preferred, $1.50, quarterly, payable April 1 to holders of record March 25.

New London Northern.—$1.75, quarterly, payable April 1 to holders of record March 15.

RAILWAY OFFICERS

EXECUTIVE

John E. Kusik has been elected vice-president—accounting of the Chesapeake & Ohio, with headquarters at Cleveland, Ohio. Mr. Kusik was born at Tallinn, Estonia, 50 years ago and came to the United States in 1921. He was graduated from the University of



John E. Kusik

Virginia in 1925 with the degree of master of science in economics. Upon graduation he joined the General Electric Company and has been associated with that company since that time, serving as comptroller and treasurer of the air conditioning department at Bloomfield, N. J., for the past 10 years.

H. A. Sanders, whose appointment as assistant to the vice-president and general manager of the Grand Trunk Western, with headquarters at Detroit, Mich., was reported in the *Railway Age*

H. A. Sanders

of February 5, entered railroad service with the G. T. W. in 1920, as trainmaster's clerk at Battle Creek, Mich. Four years later he became secretary to the assistant general manager at Detroit and, from 1930 to 1941, served as

News Department continued on next left-hand page

Racor Switch Point Locks

Fig. 3911
SWITCH POINT LOCK
(Patented)

Provide added protection for New York Central's passenger train operation.

Essential to the safe operation of these trains, facing point switches must be secured in a closed position, regardless of failure or damage to the throwing mechanism. Racor Switch Point Locks can be installed with all designs of main line switch stands. Ruggedly designed — easily installed below top of ties as protection against damage, they function independently of stand.

Fig. 3911 (illustrated) for use with all types of column throw stands.
Fig. 3912 available for use with all types of ground throw stands.

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- SAMSON SWITCH POINTS
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RACOR

secretary to the vice-president and general manager. He was subsequently appointed chief clerk to the general superintendent at Detroit, and in 1943 was transferred to Durand, Mich., as trainmaster, the position he held at the time of his recent appointment.

FINANCIAL, LEGAL and ACCOUNTING

W. E. Hand, whose appointment as assistant comptroller of the Atlantic Coast Line and the Charleston & Western Carolina at Wilmington, N. C., was reported in the *Railway Age* of January 29, was born at Pender county, N. C. He entered the service of the A.C.L. on June 21, 1920, as clerk in the office of the auditor freight receipts at Wilmington, and was appointed general ac-

W. E. Hand

countant after holding various positions in the accounting department. Mr. Hand was appointed staff assistant to the president on December 1, 1946, which position he held until his recent promotion. A photograph and biography of **M. G. Seigler,** who has also been appointed assistant comptroller of the A.C.L., were published in the *Railway Age* of November 27, 1948, page 1047.

Joseph S. Davis, general chief clerk of the Atlantic Coast Line, has been appointed assistant auditor freight receipts at Wilmington, N. C.

OPERATING

E. P. Gangewere, superintendent motive power and rolling equipment of the Reading, has been appointed assistant general manager, with headquarters as before at Reading, Pa.

J. A. Walford, general superintendent of the Western lines of the Canadian Pacific Express Company at Winnipeg, Man., has been transferred to the Eastern lines at Toronto, Ont., succeeding **E. D. Riley,** who has retired after 44 years of service in the United States and Canada. **H. L. Atto,** superintendent of the Atlantic division at Montreal, Que., succeeds Mr. Walford at Winnipeg and **K. Copeman,** assistant superintendent of the Atlantic division, succeeds Mr. Atto.

P. R. Johnson has been appointed supervisor of car service for the Burlington Lines, at Denver, Colo. Mr. Johnson has jurisdiction over the Colorado & Southern, Fort Worth & Denver City, Wichita Valley, Burlington-Rock Island and the Denver terminal of the Chicago, Burlington & Quincy.

John J. O'Brien, assistant to general superintendent of passenger transportation of the New York Central at New York, has been promoted to superintendent of passenger transportation at Chicago, with jurisdiction over the N. Y. C. line between Chicago and Buffalo, N. Y., and the Ohio Central.

G. E. Mayne, superintendent of the Montreal terminals of the Canadian Pacific, has been appointed general superintendent of the Ontario district at Toronto, Ont., succeeding **W. F. Koehn,** who is on leave of absence on account of illness. Mr. Mayne entered the service of the C. P. in June, 1918, as assistant agent at Sulphide, Ont., and served successively as operator and train dispatcher at Brownville Junc-

G. E. Mayne

tion, Me.; London, Ont.; Toronto and points on the Schreiber division until June, 1944, when he was appointed assistant superintendent of the Toronto terminals and Bruce division. He was transferred to Sudbury, Ont., the following year and to North Bay, Ont., in 1946. Mr. Mayne was promoted to superintendent of the Trenton division at Toronto in February, 1947, transferring to Schreiber, Ont., six months later and to the Montreal terminals in April, 1948.

E. C. Johnson, whose promotion to superintendent of the New York Central's Big Four lines, at Mattoon, Ill., was reported in the *Railway Age* of February 26, was born on September 18, 1898, at Elkhart, Ind., where he attended the local public schools and commercial college. He entered railroad service with the N. Y. C. on April 17, 1917, as a stenographer in the general yardmaster's office at Elkhart. In June, 1928, he was advanced to chief clerk to the trainmaster and general yardmaster at Elkhart, and later became yardmaster and night general yardmaster at that point. In June, 1940, he was promoted to terminal trainmaster at the Cleveland terminal, with headquarters at Collinwood, Ohio, and in January, 1945, was appointed assistant superintendent of the Western division at Chicago. In August, 1946, Mr. Johnson was transferred to Toledo, Ohio, as assistant superintendent, which position he held at the time of his recent promotion.

TRAFFIC

G. D. Wertz, assistant general freight agent—divisions, of the Illinois Terminal, at St. Louis, Mo., has been promoted to general freight agent—divisions, at that point. His former position has been abolished. **J. R. Considine** has been appointed assistant general freight agent—rates and tariffs, at St. Louis.

C. L. Fuller, whose promotion to traffic manager of the Minneapolis & St. Louis at Minneapolis, Minn., was reported in the *Railway Age* of January 15, entered railroad service with the M. & St. L. in 1925 as a stenographer in the traffic office at Minneapolis. He subsequently served as traffic representative at Des

C. L. Fuller

Moines, Iowa, Cincinnati, Ohio, and Indianapolis, Ind. He returned to Minneapolis in 1936, and two years later was advanced to assistant general freight agent at that point. Mr. Fuller was appointed assistant traffic manager at Minneapolis in 1945, which position he held at the time of his recent promotion to traffic manager.

A. Kuepfert, assistant general freight agent of the Missouri Pacific Lines at St. Louis, Mo., has been promoted to

News Department continued on next left-hand page

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- Conforms to latest recommendations for boiler metal protection.

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Nalco "N" is so effective that locomotives now using it are operating with no definite dissolved solids limits—and no foaming.

Blowdown reduction—often as high as 75%—results in sizable fuel savings. Reductions in terminal handling time and locomotive maintenance have reduced expenses and increased availability, thus adding to the total savings realized from the use of this modern type of anti-foam.

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general freight agent at that point, and has been succeeded by **T. J. Dempsey. Al R Miller,** assistant engineer, with headquarters at St. Louis, has been appointed industrial agent, succeeding **A. E. Kasch,** who has been assigned to other duties.

Paul A. Spiegelberg, whose promotion to freight traffic manager in charge of sales and service for the Wabash at St. Louis, Mo., was reported in the *Railway Age* of January 15, was born on April 8, 1895, in that city and was educated at St. Paul's College, Concordia, Mo. He entered railroad service with the Wabash on November 16, 1911, as a clerk in the freight accounting department. In May, 1918, he left the road

Paul A. Spiegelberg

to serve in the United States Army overseas, including the Army of Occupation in Germany. In August, 1919, he returned to the Wabash in his former position and in May, 1920, was appointed statement clerk. He later advanced, successively, to assistant chief clerk, chief clerk, assistant to general freight traffic manager, assistant general freight agent and assistant freight traffic manager. Mr. Spiegelberg held the latter position at the time of his recent promotion.

J. M. Heath, freight claim agent of the Lehigh Valley at New York, and chairman of the Freight Claim Division of the Association of American Railroads, has resigned from both positions for reasons of health and on advice of his physicians.

George H. Holt, city passenger agent of the Southern Pacific at Berkeley, Cal., has been promoted to district passenger agent at Sacramento, Cal., succeeding **M. A. Peck,** retired.

William J. Thorworth, whose promotion to traffic manager of the St. Louis-San Francisco at Mobile, Ala., was reported in the *Railway Age* of January 22, was born on May 17, 1902, at St. Louis, Mo., where he attended public and parochial schools. In September, 1916, he entered railroad service as a clerk at St. Louis with the Rock Island-Frisco Terminal (operated jointly by the Chicago, Rock Island & Pacific and the Frisco), and subsequently served in the billing, claim, accounting and cashier departments. From July, 1920, to January, 1921, he was employed by the Rock

William J. Thorworth

Island as a bill of lading clerk in the office of the general agent at St. Louis, and the following September became a clerk in the accounting department of the Frisco at that point. In June, 1925, he returned to the R.I.-F.T. as a clerk, and served also in that position with the Frisco in the division freight office and the freight and passenger office from June, 1927, to November, 1928, when he was advanced to chief clerk. In July, 1932, Mr. Thorworth was appointed traveling freight and passenger agent, with headquarters at St. Louis, and in July, 1938, he became general agent at Mobile, which post he held at the time of his recent promotion.

John R. Hundley, whose promotion to general freight agent of the Wabash, with headquarters at St. Louis, Mo., was reported in the *Railway Age* of January 15, was born on November 26, 1889, at Louisville, Ky., and attended law school at night. He entered railroad service in 1906 with the Terminal Railroad Association of St. Louis, and the next year joined the Alton (now part of the Gulf, Mobile & Ohio) at Kansas City, Mo. He was first employed by the Wabash on January 1, 1909, and has since served continuously with that road except from August, 1917, to December, 1918, when he was a captain in the American Expeditionary Force in Europe, attached to the Railway Transportation Corps, and assigned to various posts from the trainmaster to division superintendent. Mr. Hundley was assistant general freight agent for the Wabash at St. Louis at the time of his promotion to general freight agent there.

George Williams, whose retirement as traffic counsel of the Denver & Rio Grande Western at Denver, Colo., was reported in the *Railway Age* of January 22, was born July 18, 1873, at Boulder, Colo., and entered railroad service June 1, 1892, as a stenographer in the passenger department of the Union Pacific. He left this post in June, 1893, and in March, 1897, he re-entered service as stenographer to the general passenger agent of the U. P. and the Denver & Gulf (now Colorado & Southern). From July, 1898, to November, 1910, he served in various clerical capacities with the St. Louis & San Francisco (now St. Louis-San Francisco and the C. & S. He was subsequently promoted to assistant general freight agent of the C. & S. and in September, 1911, to assistant general freight and passenger agent. During World War I

George Williams

he headed a group of Colorado railroad executives assigned by the government to supervise coal movements from that state. In June, 1920, he joined the Amalgamated Sugar Company at Ogden, Utah, and seven months later he resigned to become general freight agent of the Denver & Rio Grande (now D. & R. G. W.) at Denver. In November, 1927, he was advanced to freight traffic manager and in January, 1936, to general traffic manager. In August, 1939, Mr. Williams was appointed special assistant to the trustees and in April, 1940, traffic counsel at Denver.

C. M. Francis, general agent of the Norfolk & Western at Knoxville, Tenn., has been transferred to Pittsburgh, Pa., succeeding **C. W. Nickless,** whose promotion to general freight agent at Roanoke, Va., was reported in the *Railway Age* of March 5. **J. C. Seymour,** commercial agent at Wilmington, N. C., has been appointed general agent there. **C. E. Gwin,** traveling freight agent at Atlanta, Ga., has been appointed general agent at Knoxville, succeeding Mr. Francis.

William C. Ragin, general Southern freight agent of the Atlantic Coast Line at Atlanta, Ga., has retired from active service after more than 50 years

News Department continued on next left-hand page

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ESSO STANDARD OIL COMPANY OF PENNSYLVANIA—Philadelphia, Pa.

of service with that road. Mr. Ragin was born at Summerton, S. C., on August 10, 1880, and received his education in the public schools of Sumter, S. C., and at Emory College, Oxford, Ga. Entering the service of the A.C.L. on August 21, 1898, as stenographer and clerk at Wilmington, N. C., he subsequently served as soliciting agent, traveling freight and passenger agent, special agent, commercial agent, division freight agent, assistant general freight agent, general freight agent and assistant freight traffic manager. In August, 1934, Mr. Ragin was appointed Eastern traffic manager at New York, becoming general Southern freight agent at Atlanta on November 1, 1937.

H. S. Young, assistant general freight agent of the Atlantic Coast Line at Atlanta, Ga., has been appointed assistant manager development service, with the same headquarters.

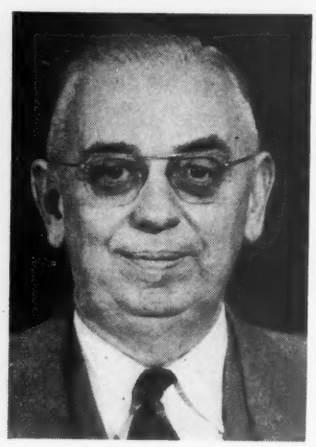
F. H. Pitman, whose appointment as general freight traffic manager of the Norfolk & Western at Roanoke, Va., was reported in the *Railway Age* of March 5, entered the service of that road in August, 1902, at the age of 14, as a mimeographer in the freight traffic department. After various promo-

F. H. Pitman

tions he was named chief rate clerk in 1916 and in 1922 was appointed division freight agent. Two years later Mr. Pitman became assistant general freight agent and in 1931 was promoted to general freight agent. He became freight traffic manager on April 1, 1934, which position he held until his recent appointment.

Frank T. Lewis, whose appointment as western traffic manager, freight and passenger departments, Chicago & North Western, at San Francisco, Cal., was reported in the *Railway Age* of February 26, was born on June 14, 1889, at Oconto, Wis. He attended high school at Florence, Wis., and entered railroad service with the North Western in 1907. He subsequently served for 18 years in the operating department at Escanaba, Mich., with the exception of three months during 1910, when he was employed by the Union Pacific at Green River, Wyo., and vicinity. At Escanaba, he held positions successively as telegrapher, agent, car distributor and train dispatcher, until April, 1926, when he was promoted to district agent, traffic department, at Green Bay, Wis. In April, 1927, he was appointed city agent at San Francisco, and in August, 1937, became general agent at Salt Lake City, Utah. Mr. Lewis was transferred to Pittsburgh, Pa., in February, 1941, and went to San Francisco in April, 1946. He was serving as general agent at the latter point at the time of his recent appointment. In his new position, Mr. Lewis will supervise the San Francisco, Oakland and Sacramento agencies.

C. F. Keeley, whose appointment as freight traffic manager of the Norfolk & Western at Roanoke, Va., was reported in the *Railway Age* of March 5, began work with the N. & W. as a stenographer in the freight traffic department nearly 40 years ago. He was



C. F. Keeley

promoted to rate clerk in 1915 and to commerce agent in 1925. Mr. Keeley became assistant general freight agent in 1931 and assistant freight traffic manager in 1939, holding the latter position at the time of his recent appointment.

MECHANICAL

P. O. Likens, general foreman, locomotive department, of the Clinchfield, has been appointed superintendent of shops, with headquarters as before at Erwin, Tenn.

George C. Wilms, Jr., mechanical engineer of the Jersey Central Lines, has been appointed to the newly created post of assistant superintendent of motive power and rolling equipment, with headquarters as before at Elizabethport, N. J. **Joseph H. Smith,** chief draftsman, succeeds Mr. Wilms as mechanical engineer. Mr. Wilms was born at Baltimore, Md., 37 years ago, and served for several years with the Baltimore & Ohio as a draftsman, cost study engineer and motive power inspector. He became mechanical engineer of the Jersey Central Lines on June 23, 1947.

Mr. Smith was born at Paterson, N. J., 57 years ago and started his railroad career with the Central of New Jersey on April 25, 1904, as a draftsman.

Howard Hill, superintendent of shops of the Reading, has been appointed superintendent motive power and rolling equipment, with headquarters as before at Reading, Pa., succeeding **E. P. Gangewere,** who has been appointed assistant general manager.

ENGINEERING & SIGNALING

Homer B. Garrett, whose promotion to signal engineer of the Southern Pacific at San Francisco, Cal., was reported in the *Railway Age* of February 5, was born on August 6, 1902, at Eldorado, Tex. He attended high school at Tucson, Ariz., and studied electrical engineering at the Tri-State College of Engineering at Angola, Ind., from 1922 to 1923. Mr. Garrett entered S. P. service in July, 1918, as a machinist's helper in the roundhouse at Tucson. In January, 1919, he became a signal helper, leaving the road in June, 1919, to attend school. He served as an assistant signalman, signalman and batteryman on the Tucson division from June, 1920, to September, 1922, when he obtained a leave of absence to attend college. On returning to the S. P. in September, 1923, he held successive positions as signalman, Tucson division; signal foreman, Tucson and Rio Grande division; and assistant signal supervisor at Gila, Ariz. In October, 1926, he was promoted to general construction foreman, construction department, and in August, 1927, was advanced to assistant signal supervisor at Phoenix, Ariz., being transferred in December, 1936, to Watsonville Junction, Cal., and in July, 1937, to San Jose, Cal. In April, 1940, Mr. Garrett was appointed signal supervisor of the Western division, and in 1941 became general signal inspector at San Francisco. In 1946 he was appointed assistant signal engineer at that point, which position he held at the time of his recent promotion.

Bernel H. Bailey, whose promotion to superintendent of telephone, telegraph and train communications of the Duluth, Missabe & Iron Range at Two Harbors, Minn., was reported in the *Railway Age* of February 12, was born on August 17, 1894, at Lisbon, Iowa. He attended the public schools at Two Harbors and the University of Minnesota, and in 1914 began his career in the telephone department of the D.

Continued on second right-hand page

M. & I. R. During World War I he served for 16 months in the signal corps and subsequently returned to railroad service. In 1947 Mr. Bailey was appointed plant supervisor, and in May, 1948, became assistant superintendent of telephone, telegraph and train communications at Two Harbors. He held the latter position at the time of his recent promotion.

L. P. Urquhart, whose promotion to assistant to the chief engineer of the Denver & Rio Grande Western at Denver, Colo., was reported in the *Railway Age* of January 29, was born on January 28, 1909, at Midvale, Utah, and entered railroad service with the D. & R. G. W. on October 26, 1930, as a locomotive

L. P. Urquhart

fireman. In July, 1942, he was advanced to locomotive engineer on the Salt Lake division, and in September, 1944, to assistant trainmaster, with headquarters at Salt Lake City, Utah. In December, 1947, Mr. Urquhart was advanced to trainmaster at Alamosa, Colo., which position he held at the time of his recent promotion.

Charles W. Reeve, engineer of track of the Delaware & Hudson, with headquarters at Albany, N. Y., has been promoted to division engineer of the Champlain division at Plattsburg, N. Y., succeeding **C. E. R. Haight,** who has been transferred to the Saratoga division at Albany, where he replaces **J. C. Dorsey,** whose death is reported elsewhere in these columns. **R. J. D. Kelly** has been appointed assistant construction engineer at Albany, succeeding **Joseph C. Brennan,** who has been promoted to engineer of track to replace Mr. Reeve. These appointments were effective March 1.

Roy D. Moore, whose retirement as signal engineer of the Southern Pacific at San Francisco, Cal., was reported in the *Railway Age* of February 5, was born on January 29, 1884, at Topeka, Kan., and entered S. P. service on January 30, 1900, as an apprentice in the signaling department at Los Angeles, Cal. He subsequently served in various capacities in that department and in November, 1907, became signal supervisor of the Shasta (Cal.) division. In May, 1909, he was transferred to the Sacramento (Cal.) division, and in 1911 went to the Los Angeles division. In November, 1918, Mr. Moore was appointed assistant signal engineer for the company's Pacific Lines, and in February, 1931, was promoted to signal engineer, at San Francisco.

James W. Wiggins, whose appointment as engineer maintenance of way of the Maine Central and the Portland Terminal at Portland, Me., was reported in the *Railway Age* of February 5, was born at Houlton, Me., and was graduated in 1930 from the University of Maine. He entered railway service in that year on the Erie and, in 1933, went with the Bangor & Aroostook as a rod-

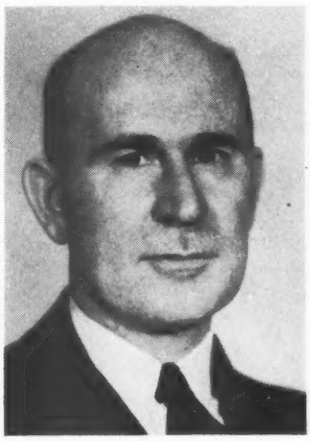
James W. Wiggins

man. In 1936 he went to the Maine Central as assistant engineer, returning to the Bangor & Aroostook as superintendent of bridges and buildings in 1938. He was promoted to principal assistant engineer of that road in 1940. He resigned in 1945 to join the Boston & Maine as assistant to the chief engineer at Boston, Mass., which position he held until his recent appointment.

George F. Hand, assistant to the chief engineer of the New York, New Haven & Hartford, at New Haven, Conn., retired on March 1 after 43 years of service.

R. A. Shier, assistant division engineer of the Canadian National at Belleville, Ont., has been appointed division engineer at Hornepayne, Ont., succeeding **F. S. Hutton.**

J. N. Smeaton, whose appointment as valuation engineer of the Canadian National at Toronto, Ont., was reported in the *Railway Age* of February 5, was born at London, Ont., and began his career with the C. N. R. there in May, 1916, as a rodman. Mr. Smeaton served successively as leveller, chainman and computer until 1920, when he went to Montreal, Que., as a computer, transferring to Toronto three years later. He subsequently became engineer accountant at Toronto, transferring to the Terminal Development department at Mon-



J. N. Smeaton

treal in 1939. Mr. Smeaton moved to the chief engineer's department as engineer accountant in 1942, in which capacity he served until his recent appointment.

John S. McBride, whose appointment as chief engineer consultant of the Chicago & Eastern Illinois at Chicago, was reported in the *Railway Age* of March 5, is a native of Louisville, Ky., and a graduate in civil engineering of the Rose Polytechnic Institute. Upon graduation from college in 1905, he entered railroad service with the C. & E. I. as an instrumentman, and later that year he became a resident engineer. In 1906 he was appointed an assistant in the engineering corps, and in 1908 was advanced to assistant engineer. He served as valuation engineer from 1914 to 1916, when he was promoted to valuation and principal assistant engineer. Mr. McBride became valuation engineer in charge of various phases of construction and maintenance in 1919, and was further promoted to chief engineer, with headquarters at Chicago, in 1931, which position he held at the time of his recent appointment.

PURCHASES & STORES

Franklin W. Pettit, whose promotion to general purchasing agent of the Western Maryland at Baltimore, Md., was reported in the *Railway Age* of January 15, was born on May 15, 1898, at Baltimore. Mr. Pettit was graduated in 1916 from Baltimore City College and entered railroad service on May 9, 1917, with the Pennsylvania in the maintenance of way and signal department. He was furloughed during World War I, returning to the P.R.R. on January 1, 1918, and remaining with that road until October 30, 1920. Mr. Pettit entered the service of the Western Maryland as secretary to the general purchasing agent on November 1,

1920, and has since remained with that road, except for the period from January 31 to September 17, 1923. He was appointed assistant to general purchasing agent of the Western Maryland on November 1, 1936, in which capacity he served until his recent promotion.

Franklin W. Pettit

SPECIAL

John J. Sullivan, whose promotion to manager of personnel for the Southern Pacific at San Francisco, Cal., was reported in the *Railway Age* of February 26, entered S. P. service in April, 1904, as a yard clerk at Lordsburg, N. M. He subsequently held various operating positions on practically all divisions of the road's western lines, and, for a time, was general agent with the American Railway Association (now Association of American Railroads). From March, 1918, to October, 1919, he served as an officer in the United States Army, spending most of the time in France as assistant superintendent and superintendent in railway transportation service. In March, 1920, he was appointed supervisor of transportation for the S. P.'s Northern district, and successively held the positions of trainmaster at Tracy, Cal., and Yuma, Ariz., terminal trainmaster at Los Angeles, Cal., trainmaster and assistant superintendent at Dunsmuir, Cal., special representative of the general manager, assistant division superintendent at Ogden, Utah, and Stockton, Cal., assistant to general manager, and assistant manager of personnel. In April, 1941, Mr. Sullivan was advanced to first assistant manager of personnel, the post he held at the time of his recent promotion.

John J. Sullivan

OBITUARY

Earl Sullivan, late assistant general manager of the Missouri Pacific at St. Louis, Mo., whose death was reported in the *Railway Age* of February 26, was born at Riverside, Cal., on January 11, 1888, and was graduated in civil engineering from Washington & Lee University at Lexington, Va. He entered M. P. service on July 26, 1909, as a track apprentice at Sugar City, Colo., and later served in various positions in the operating departments at Atchison, Kans., Falls City, Neb., Omaha and Kansas City, Mo. Mr. Sullivan was subsequently promoted to assistant engineer at Falls City, where he remained until 1917, when he was assigned to supervise distribution of rail and track material in the chief engineer's office at St. Louis. He was appointed division engineer on the Southern Kansas division at Coffeyville, Kans., in 1920, trainmaster on the same division in 1925, trainmaster on the Colorado division at Hoisington, Kans., in 1928, assistant superintendent at Pueblo, Colo., in 1929, and district engineer at Kansas City in 1933. In 1938 Mr. Sullivan was advanced to division superintendent at Coffeyville, and in 1941 was transferred to Palestine, Tex. In October of the latter year, he was appointed general superintendent of transportation at St. Louis, and in August, 1945, became general superintendent at Kansas City. In February, 1947, Mr. Sullivan was further promoted to assistant general manager.

H. E. Fries, president and general manager of the Winston-Salem Southbound and vice-president of the Winston-Salem Terminal Company, at Winston-Salem, N. C., died on March 3.

Michael H. Brickley, late superintendent of telephone, telegraph and train communications of the Duluth, Missabe & Iron Range at Two Harbors, Minn., whose death was reported in the *Railway Age* of February 12, was born on January 10, 1882, at New Richmond, Wis. He joined the army at 16 years of age and served in Puerto Rico during the Spanish-American War. He was subsequently employed by the Tri-State Telephone Company at Superior, Wis., and in 1903 was appointed manager of the Duluth & Iron Range Telephone Co. (operated by the D. M. & I. R.) at Two Harbors. Mr. Brickley was later promoted to superintendent of maintenance and construction, and in 1926 became superintendent of telephone, telegraph and train communications of the D. M. & I. R.

James B. Early, assistant treasurer of the Southern System at Washington, D. C., died on February 28.

John C. Dorsey, division engineer of the Saratoga division of the Delaware & Hudson, at Albany, N. Y., died in Memorial Hospital in that city on February 24, after a short illness.

Benjamin R. Pollock, who retired in March, 1927, as vice-president and general manager of the Boston & Maine at Boston, Mass., died on March 4 at the age of 84. Mr. Pollock served as general manager of the New York, New Haven & Hartford during 1912.

George C. Jefferis, late general manager of the Atchison, Topeka & Santa Fe's Western Lines, at Amarillo, Tex., whose death was reported in the *Railway Age* of February 26, was born on September 27, 1889, at Philadelphia, Pa., where he attended high school. He entered railroad service in 1904 with the Pennsylvania and served with that road until March, 1911, as telegraph operator, extra agent and train director, successively. He then joined the Santa Fe at Amarillo, and subsequently held various positions in the engineering department, including a brief period of service as draftsman in the engineer's office at that point. He was appointed roadmaster in 1916, division engineer on the Pecos division in 1917, assistant superintendent in 1924, and superintendent on the Slaton division in 1935. He was subsequently transferred to Arkansas City, Kan., and in July, 1938, was promoted to assistant general manager, Western Lines, Northern district, at La Junta, Colo. In July of the following year, Mr. Jefferis was advanced to assistant to the vice-president, operations, at Chicago, and in July, 1942, became general manager of the Western Lines.

George C. Jefferis

News Department continued on next left-hand page

READING COMPANY 1948

REVENUES, EXPENSES and EARNINGS for 1948

		1948	Change from 1947 INCREASE—I DECREASE—D
REVENUES FROM OPERATION			
Anthracite	$24,554,480		
Bituminous Coal	24,537,909		
Merchandise	65,796,801		
Passenger	8,030,597		
Other income	6,396,613	$129,316,400	$12,556,358—I
EXPENSES OF OPERATION		101,585,841	10,691,722—I
LEAVING AS NET REVENUE FROM OPERATIONS		$ 27,730,559	$ 1,864,636—I
TAX ACCRUALS—Applicable to railway operations, including $6,999,065 for Federal and State Income Taxes and $3,894,795 for railroad retirement and unemployment insurance taxes		13,282,669	310,364—I
NET PAYMENTS FOR RENT OF EQUIPMENT AND JOINTLY USED RAILROAD FACILITIES		524,761	416,885—D
NET RAILWAY OPERATING INCOME		$ 13,923,129	$ 1,971,157—I
OTHER INCOME—Dividends, interest, and rentals, less miscellaneous deductions		1,812,436	213,025—I
GROSS INCOME AVAILABLE FOR FIXED CHARGES		$ 15,735,565	$ 2,184,182—I
FIXED CHARGES—Including $3,020,885 interest on funded debt and $2,226,948 rent for leased roads		5,323,555	12,179—D
NET INCOME AVAILABLE FOR DIVIDENDS, CAPITAL EXPENDITURES AND OTHER CORPORATE PURPOSES		$ 10,412,010	$ 2,196,361—I

Wages charged to operating expense were $63,120,157, equal to 48.8 cents out of each dollar of operating revenue.

Reading has paid dividends on all classes of stock for 43 consecutive years. Payments to stockholders in 1948 were $4,896,834, an increase of $700,000 over 1947.

Annual net rents payable for leased roads were reduced by $142,412 through purchase of securities of lessor companies.

Operating ratio was 78.56% compared with 77.85% in 1947. Transportation ratio was reduced from 39.2% to 38.8%.

Operating efficiency has continued to improve. Reading's long-range program for road and equipment improvement has progressed and, as a result, the Company is well equipped to serve the needs of the shipping and traveling public.

Robert Brown

President

$55,300,000 INVESTED IN IMPROVEMENTS 1944—1948

New equipment acquired:
- 11 4-unit diesel road freight locomotives
- 53 diesel switching locomotives
- 30 steam freight locomotives
- 10 steam passenger locomotives
- 7,176 freight cars
- 4 carfloats
- 6 steel lighters
- 2 streamlined passenger trains, *Wall Street* and *Schuylkill*

Railroad bridges built or strengthened:
100 important bridges, including the new million-dollar bridge over the Schuylkill River at Reading, Pa.

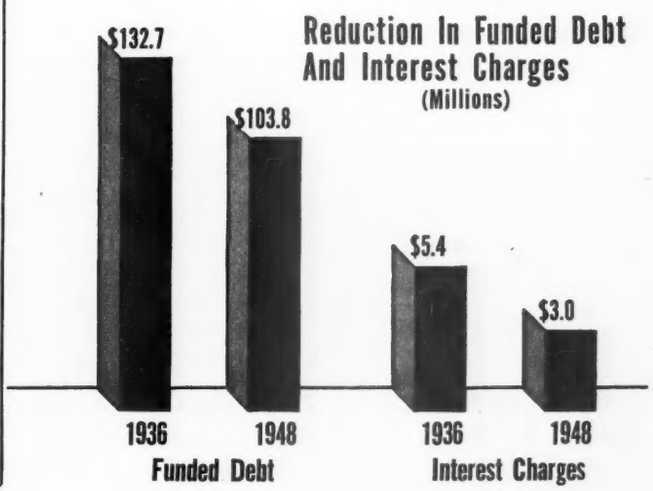
Signal modernization:
Color light signals installed on more than 370 miles of track and 37 interlocking plants modernized.

Engine servicing facilities modernized:
Newberry Junction, Rutherford, Port Reading and Erie Avenue, Philadelphia.

Turn-tables lengthened and strengthened:
Rutherford, Reading, Bridgeport, Erie Avenue and 9th and Green Streets, Philadelphia.

Flood protection:
Tracks being raised and new bridges constructed at several points between Sunbury and Williamsport along the Susquehanna River.

Reading Terminal modernization:
Station and office facilities being improved, with large area to be made available for rental as shopping center.



GENERAL NEWS

(Continued from page 102)

Hold Final I. C. C. Hearing on Railroad Space Sales Practices

"The most exhaustive investigation by the carriers has failed to unearth any irregularities or abuses in the making of railroad reservations," Joseph M. Vonau, Jr., assistant to vice-president, system passenger traffic, Southern Pacific, declared at Los Angeles, Cal., on February 28, at the fourth and final hearing in connection with the Interstate Commerce Commission's investigation of alleged "black market" reservation practices. Mr. Vonau's testimony — to the effect that "transcontinental railroads having terminals on the Pacific Coast can definitely deny the existence of irregular practices" — was, in general, corroborated by other railroad witnesses and was much the same as had been given at three previous hearings at Chicago, New York and Miami, Fla. (See *Railway Age* of November 27, 1948, page 40; December 25, 1948, page 48; and February 5, 1949, page 112.)

The only so-called public witness to testify at the Los Angeles hearing was one Robert Franklin of Fresno, Cal., who asserted that he paid a "scalper" in the Merchandise Mart at Chicago, on January 25, 1947, $10 each for two hurried reservations to San Francisco, Cal. The witness could not remember the name of the man to whom he paid the gratuity.

Mr. Vonau further declared that methods now employed by the carriers have stood the "test of experience," and that existing regulations respecting sale and redemption of sleeping car and reserved coach tickets "are in the public interest." He reiterated the testimony of railroad witnesses presented at previous hearings, to the effect that if the railroads have had a problem with train reservations "it has not been due to lack of accommodations, but primarily because of demands for room-type of space." He pointed out that the Coast area served by the S. P. has, since 1940, experienced a population increase of more than 40 per cent, and that the S. P. carried in excess of 3,000,000 more passengers in 1948 than in 1940.

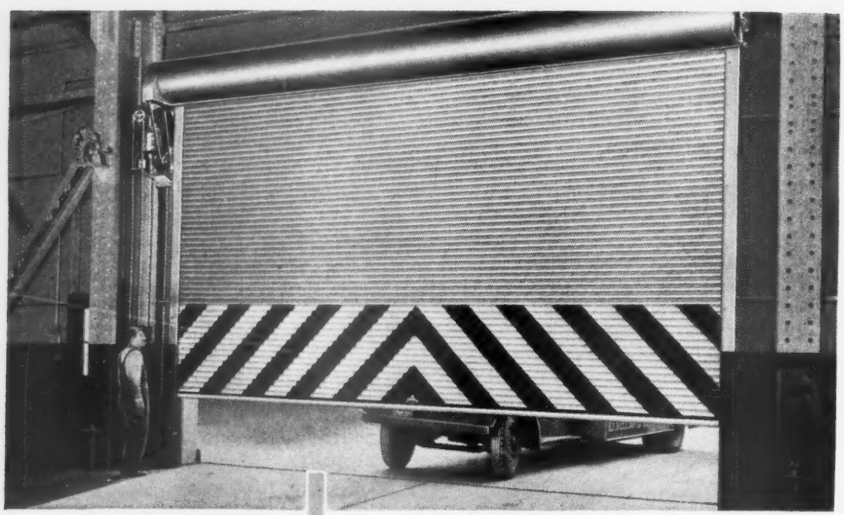
Among other witnesses were R. T. Anderson, general passenger traffic manager of the Atchison, Topeka & Santa Fe, and A. G. Hilker, general passenger agent of the Union Pacific.

Railroad Officers on Chicago Radio Program

What the nation's railroads are doing to improve their plant and services will be discussed by four railroad officers over radio station WLS, Chicago (890 on the dial) on the "Dinner Bell" program on March 16, from 12 to 12:30 p.m., in connection with the annual meeting of the American Railway Engineering Association. Those who will be heard on the broadcast are William T. Faricy, president of the Association of American Railroads; Charles H. Mottier, president of the A.R.E.A. and vice-president and chief engineer of the Illinois Central; Frederick S. Schwinn, vice-president of the A.R.E.A. and assistant chief engineer of the Missouri Pacific Lines, and Albert R. Beatty, assistant vice-president of the A.A.R.

New Haven Timetables to Show Daylight Saving Time Schedules

The New York, New Haven & Hartford will list schedules of its trains in daylight saving time in all its public timetables beginning April 24, when d.s.t. becomes effective for 1949. It also will operate all public clocks in its own stations on daylight time. "We want to make traveling by train just as easy and attractive for the traveling public as is possible," Henry F. McCarthy, vice-president, traffic, said. "We believe we can eliminate much general confusion and annoyance which has obtained during the change to daylight time each year."



KINNEAR STEEL ROLLING DOORS

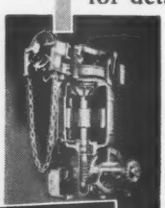
Space-Saving Convenience Plus a Bonus In Protection

It's easy to see why Kinnear Rolling Doors offer so many cost-cutting, time-saving advantages. They open straight upward and coil into a small area above the doorway. As a result, all floor, wall and ceiling space around the opening is *fully usable at all times.* No areas need to be reserved for door action. When opened, the doors clear the entire doorway. They stay completely out of the way, safe from damage by wind or vehicles.

Along with this high efficiency and convenience, you get a bonus of all-around protection and low-maintenance service. The strong but flexible *Kinnear-originated* curtain of interlocking steel slats gives extra protection against fire, wind, riot, intrusion, and accidental damage. Kinnear Rolling Doors are built to fit any openings in old or new buildings. Motor or manual control. Write for details.

MOTOR OPERATION

The rugged Kinnear Motor Operator shown at right can be added to any Kinnear Rolling Door for maximum speed, ease, and convenience of operation.



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In addition to push-button controls at the doorway, others may be added, at any number of convenient points, on motorized Kinnear Doors.

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Offices and Agents in all Principal Cities

News Department continued on next left-hand page

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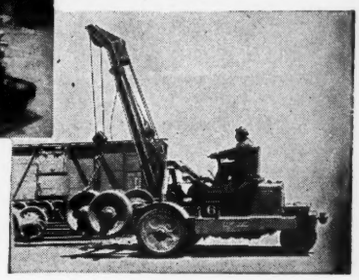
RAIL-O-ROAD KRANE KAR
For ON and OFF the Tracks

Equipped with both FLANGED wheels for service on tracks and RUBBER TIRED wheels for operation on paved or dirt road.



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One to 10 ton cap., 9 to 37 ft. booms or telescopic booms, solid or pneumatic rubber tires, gasoline or Diesel.

KRANE KAR lifts, transports, and spots the loads, handling them at the sides as well as at the front. Use ***KRANE KAR*** for lifting and transporting ties, frogs, switches, rails, wheels and axles . . . for rip track work . . . for maintenance of way and track repairs . . . for locomotive stalls, car repair shops and other maintenance chores . . . and for stores materials handling. Available with electric magnet and clamshell bucket. Ask for Bulletin No. 69 on ***KRANE KAR*** and Bulletin No. 68 on ***RAIL-O-ROAD KRANE KAR.***

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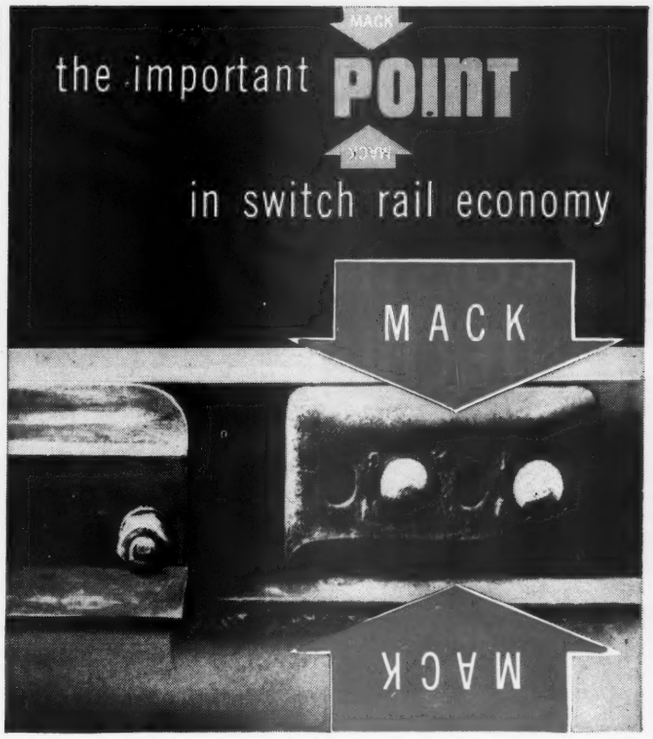

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- As originally applied, MACK lengthens Switch Rail Life 4 or 5 Times.
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So, your Switch Rail Life is actually lengthened 8 to 10 times!

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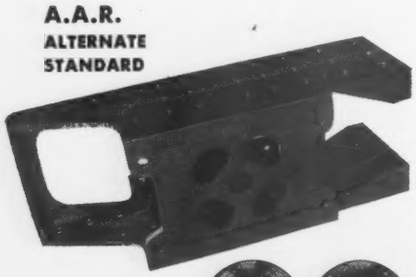

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SELECTED INCOME AND BALANCE-SHEET ITEMS OF CLASS I STEAM RAILWAYS IN THE UNITED STATES

Compiled from 127 reports (Form 1BS) representing 131 steam railways.
(SWITCHING AND TERMINAL COMPANIES NOT INCLUDED)

Income Items	United States For month of November 1948	1947	For the eleven months of 1948	1947
1. Net railway operating income	$84,065,713	$65,954,486	$937,690,383	$703,911,817
2. Other income	20,450,484	19,730,898	196,393,771	182,448,310
3. Total income	104,516,197	85,685,384	1,134,084,154	886,360,127
4. Miscellaneous deductions from income	4,867,888	3,340,164	58,916,787	39,053,568
5. Income available for fixed charges	99,648,309	82,345,220	1,075,167,367	847,306,559
6. Fixed charges:				
6-01. Rent for leased roads and equipment	10,466,251	9,271,772	120,535,073	112,286,039
6-02. Interest deductions[1]	24,205,699	25,316,455	266,903,846	284,203,344
6-03. Other deductions	221,504	165,198	1,776,575	1,675,958
6-04. Total fixed charges	34,893,454	34,753,425	389,215,494	398,165,341
7. Income after fixed charges	64,754,855	47,591,795	685,951,873	449,141,218
8. Other deductions	2,994,505	3,098,094	35,145,262	31,422,647
9. Net income	61,760,350	44,493,701	650,806,611	417,718,571
10. Depreciation (Way and Structures and Equipment)	32,276,606	29,916,498	342,768,896	323,105,363
11. Amortization of defense projects	1,396,566	1,267,324	15,410,283	14,787,544
12. Federal income taxes	41,338,248	24,558,625	414,651,700	273,452,193
13. Dividend appropriations:				
13-01. On common stock	52,961,970	47,650,110	190,907,490	161,209,492
13-02. On preferred stock	6,853,158	8,620,008	58,987,830	45,653,851
Ratio of income to fixed charges (Item 5 ÷ 6 = 04)	2.86	2.37	2.76	2.13

Selected Expenditures and Asset Items	United States Balance at end of November 1948	1947
17. Expenditures (gross) for additions and betterments—Road	$307,737,142	$256,380,222
18. Expenditures (gross) for additions and betterments—Equipment	808,053,373	492,434,426
19. Investments in stocks, bonds, etc., other than those of affiliated companies (Total, Account 707)	522,708,801	581,484,861
20. Other unadjusted debits	142,366,033	197,388,705
21. Cash	1,012,469,897	1,022,996,967
22. Temporary cash investments	1,045,082,390	1,004,077,371
23. Special deposits	103,870,784	134,299,540
24. Loans and bills receivable	13,340,501	14,204,671
25. Traffic and car-service balances—Dr.	57,420,453	51,202,310
26. Net balance receivable from agents and conductors	150,967,062	145,988,566
27. Miscellaneous accounts receivable	361,144,168	295,931,468
28. Materials and supplies	844,191,116	753,331,021
29. Interest and dividends receivable	22,708,110	28,433,033
30. Accrued accounts receivable	174,192,069	174,929,200
31. Other current assets	35,823,188	36,950,000
32. Total current assets (items 21 to 31)	3,821,209,738	3,662,344,147
Selected Liability Items		
40. Funded debt maturing within 6 months[2]	$158,565,758	$121,944,783
41. Loans and bills payable[3]	3,525,815	4,875,000
42. Traffic and car-service balances—Cr.	101,183,613	109,870,886
43. Audited accounts and wages payable	607,458,319	610,772,138
44. Miscellaneous accounts payable	228,128,184	214,582,316
45. Interest matured unpaid	43,214,812	43,234,501
46. Dividends matured unpaid	13,348,308	12,086,861
47. Unmatured interest accrued	83,485,548	75,946,259
48. Unmatured dividends declared	68,240,173	60,639,924
49. Accrued accounts payable	202,670,934	182,241,811
50. Taxes accrued	783,490,793	621,816,822
51. Other current liabilities	86,783,855	99,546,839
52. Total current liabilities (items 41 to 51)	2,221,530,354	2,035,613,357
53. Analysis of taxes accrued:		
53-01. U. S. Government taxes	644,764,276	498,067,283
53-02. Other than U. S. Government taxes	138,726,517	123,749,539
54. Other unadjusted credits	302,723,523	329,781,870

[1] Represents accruals, including the amount in default.
[2] Includes payments of principal of long-term debt (other than long-term debt in default) which becomes due within six months after close of month of report.
[3] Includes obligations which mature not more than one year after date of issue.
Compiled by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission. Subject to revision.

Publications

PAMPHLETS

Contents of 399 Employees Magazines. 72 pages. Published by the Policyholders Service Bureau, Metropolitan Life Insurance Company, One Madison ave., New York 10, N. Y.

Analyzes the material which industrial editors throughout the United States and Canada are using today in an effort to create better informed and more cooperative employees. It is the second report on this subject. A previous study of the contents of 325 employee magazines was issued in 1942. One of the features of the new report is the contrast of the type of material appearing in employee magazines five years ago with that being used today. Some of the subjects covered are editorial messages from executives; efforts to increase efficiency; financial information about the company; recognition of employees; health and safety promotion; information about the industry; the woman's page, etc. The final section outlines methods of checking reader interest. Seven railroad company publications are among those used as examples and illustrations.

Evolution of Parcel Checking. Issued by the American Locker Company, Boston, Mass.

A brochure, liberally illustrated with

colored pen and ink sketches, describing evolution of parcel checking from the storage-rack-and-counter methods of Civil War days to the individual steel lockers of today.

Delivered Pricing and the Law. 27 pages. Published by the Committee on Economic Policy, Chamber of Commerce of the United States, Washington 6, D. C. Single copies 20 cents.

This report contains no proposals by the Chamber of Commerce. Its purpose is to make available to students of the problem an approach embodying one line of analysis that they might find usefully suggestive. After an introduction covering the legal background of the problem, and a glossary of terms used, it discusses such subjects as the collusion angle, the "cut-throat competition" angle, and comparison of basing-point and variable f.o.b. pricing.

PERIODICAL

Overseas Railways, 1948. 163 pages. Published by the Railway Gazettte, 33 Tothill st., Westminster, S.W.1, London, England. Five shillings.

For many years prior to the war, the Railway Gazette issued special annual numbers dealing exclusively with overseas railways; the last of these appeared in November, 1939. With the present issue, dated December, 1948, publication is resumed. It reviews the present position and development programs of railways in other parts of the world in which Great Britain is, or has been, interested. A number of splendid maps and illustrations are included.

FILMS

The One Man Gang. 30-min., sound motion picture. Towmotor Corporation, Cleveland, Ohio. Available for private showings to industrial groups and meetings.

A visual demonstration of materials handling applications in the plants of some of the country's leading manufacturers. Eighty per cent of the unskilled workers in the average plant, the Towmotor Corporation states, are used to move things in the process of production—the cost therefor usually exceeding that of the freight charges—and the purpose of the picture is to show how mechanized handling methods can be the most effective means of cost reduction.

It Must Be Somewhere! 30-min., sound, color motion picture. Remington Rand Inc. Available free, with operator and projector, for private and group showings, from any Remington Rand branch office, or from Remington Rand Systems division, 315 Fourth ave., New York 10.

Portrays the importance of simplified, efficient filing methods in business, with emphasis on Remington Rand's "Variadex" system.

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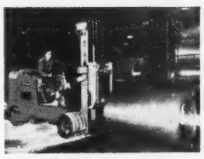
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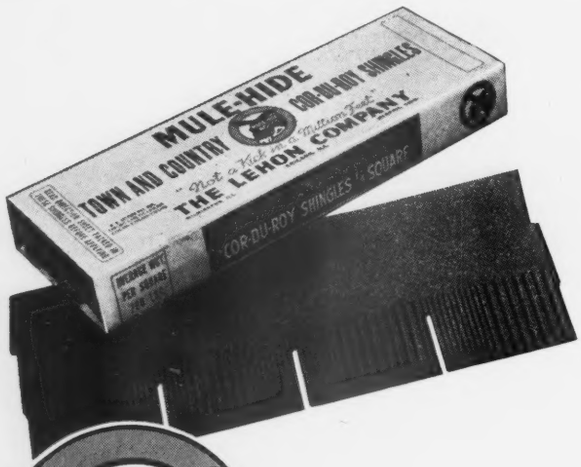

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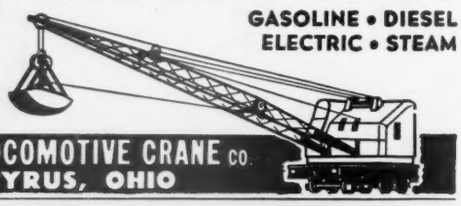

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